Single Copies 10¢
Subscription rate $3.50 per yr.
in U.S.A. and Mexico (U.S. money)
$4 in Canada
$5 in foreign countries
Trade Mark reg.
U.S. Pat. Off.
Members of
Audit Bureau
of Circulations and
Associated Business Papers, Inc.

NATIONAL PETROLEUM NEWS

Branch Offices:
LOS ANGELES
Petroleum Securities Building
TULSA
World Building
NEW YORK
342 Madison Avenue
HOUSTON
614 West Building
CHICAGO
35 Wacker Drive

Published by the National Petroleum Publishing Co. MAIN OFFICE: 812 Huron Road, Cleveland, Ohio. Copyrighted 1927.

Vol. XIX Cleveland, Ohio, May 11, 1927 No. 19

Okmulgee Producers Asked to Initiate Relief Measures for Mid-Continent

By Lawrence E. Smith
N. P. N. Staff Writer

OKMULGEE, OKLA., May 7

TWO definite suggestions for relieving the overproduction-depressed price conditions now prevalent were made today by E. B. Reeser, president of the Barnsdall Corp., in his address before the Okmulgee District Oil & Gas Assoc.

One suggestion was that a state law in Oklahoma be tried out. This law, which has been on the statute books for years, has to do with production of oil and its sale below cost of production. Mr. Reeser raised the question whether it would not afford relief if the corporation commission of the state should issue an order limiting the output of oil wells to not more than 100 barrels daily each. He would make such an order operative until crude oil prices again reached the point where they would cover the cost of operating small wells and afford a reasonable profit.

The other suggestion was that the Interstate Commerce Commission assert greater authority over pipe lines and require them to show public necessity before extensions to new oil fields be made.

At the conclusion of Mr. Reeser's address, which was before the regular Saturday noon meeting of the association, a resolution was offered by M. C. French, independent producer, suggesting that a definite start be made through oil associations to see how the federal government would look upon cooperative agreements among producers to restrict production. This was voted down. Later a motion prevailed to submit the resolution to the board of directors of the association, for them to study and report their views at a later meeting.

THE French resolution asked the American Petroleum Institute to name a small committee—three to five men— to see the Federal Oil Conservation Board and Department of Justice to ascertain what rights the oil producers have under existing laws in entering into agreements to restrict production to check demoralization of the industry.

The resolution further would have pledged the Okmulgee association to give prompt consideration to any plan that might be suggested as the result of such conferences. Further, it asked that a committee be appointed from the Okmulgee association to present the subject to the American Petroleum Institute and to the Mid-Continent Oil & Gas Association, whose aid would be solicited.

FOLLOWING the reading of the resolution and Mr. French's remarks in support of it, a lively debate ensued, with a half dozen or more members expressing themselves on one side or the other. The vote on the question was not far apart, but more than half of the 50-odd members present did not express themselves either way.

John H. Rebold, independent operator, was first in the discussion and opposed the move. There are about ten of the industry's leaders, said Mr. Rebold, who can control the situation if they will and it is better to look to them to do it than to attempt to enlist the political forces. It has been his observation, Mr. Rebold went on, that, whenever you ask for regulation, you get more than you wanted. The oil industry will "rot," said he, if the government is brought in to supervise it.

Mr. French replied that this was not an attempt to procure federal regulation, but to see what the limitations are to the industry's doing the regulating for itself.

Followed then C. Rae, U. S. Geological Survey deputy supervisor, who works in the Okmulgee district in enforcing federal regulations on restricted Indian lands. Mr. Rae said it was his own opinion that the federal government would not object to the principle of storing the oil "in the sands" instead of above ground, and cited shut-in production in California and Wyoming on which no governmental interference had been raised. Later speakers pointed out that the shut-in production in California was not so bottled up as the result of agreements between operators, that it was so situated as to be free from danger of drainage, that in the case of Wyoming, most of the shut-in production was in the Salt Creek field and all controlled by a single company.

There is an effort now being made, said W. E. Wood, secretary-treasurer of the Kingwood Oil Co., to "get the oil men to endorse some kind of a move, the nature of which is not clear." He advised his fellow association members to proceed cautiously and to "know what it is all about." For his part, he said, he cannot see that any progress will be made in trying to suspend the same economic laws that govern every industry.

Mr. Wood had reference here to resolutions endorsed some time ago by the Rocky Mountain Oil & Gas Association and submitted recently to the Okmulgee association. These resolutions were a general endorsement of the principle of conservation and pledge of co-operation between producers and governmental agencies on public and Indian lands.

TRUE, chaotic conditions now prevail, said Mr. Wood, and the end is not in sight. It is a case of the "survival of the fittest." Some companies may not be able to come through the depression. But the oil industry, like any other, is a competitive one and it should stand or fall on the same laws of trade that govern industry generally. He is op-

posed to any form of political control, Mr. Wood said.

J. B. Twitchell, independent operator, said he believed that the limiting of the production by state order, as suggested by Mr. Reeser, was feasible.

J. J. Moroney, independent operator, spoke briefly in urging that the address of Mr. Reeser be studied carefully. Its true meaning could not be gained by merely hearing it once, he said. He believed that the questions raised in the address and the suggestions advanced merited close study. To him, Mr. Moroney said, the biggest inconsistency in the oil industry today is the generally expressed fear of governmental action when the industry is rushing headlong into a situation that will demand such interference.

Cooperation is the true remedy, said Mr. Moroney, but it is difficult to obtain because some companies are profiting by the present situation.

Mr. Reeser, speaking again after the vote had been taken on the resolution, replied to the question asked by W. E. Wood as to what the Barnsdall interests had done to restrict production, adding that he had observed that the Barnsdall had displayed the same avidity in drilling Seminole properties as anyone else. Mr. Reeser said that his company had taken the lead in every effort to halt drilling, but that certain companies do not want to stop, using as the excuse the fear of prosecution under the anti-trust laws.

Mr. Reeser's remarks on his proposition that the Oklahoma state law be invoked to limit production to not over 100 barrels per well a day were:

"PRODUCERS of Oklahoma have recently been called before the Corporation Commission of Oklahoma and extended hearings have been had before that Court. It appears that the basis of such proceedings is a chapter of the laws of the State of Oklahoma, comprised in Sections 7954 to 7963, inclusive, which seek to prevent the taking of crude oil from the oil-bearing sands at a time when there is not a price therefor equivalent to the actual value of such crude oil in the markets, and the legislature of Oklahoma defines these acts as 'economic waste.'

"I would like to have some lawyer advise me as to whether compliance with such laws of Oklahoma would subject us to prosecution for violation of the Sherman Anti-Trust Act, and if the Corporation Commission of Oklahoma violated that Act when they attempted to enforce the State law.

"It would at least be interesting to ask the Oklahoma Corporation Commission to attempt to enforce this law. Many problems in connection with the practical working of the law would be presented. Any plan that we could think of would be full of problems, but let us assume that the Corporation Commission issues an order that the output of every oil well in the state be limited to not more than 100 barrels per day until the price of crude oil at the well is sufficient to cover the full cost of operating the small wells, plus a reasonable profit.

"If it were legally possible to put into effect such an order, the Seminole area, for instance, with its 380 wells, would have a maximum production of 38,000 barrels instead of 353,000 barrels.

THE excess production in the United States today is approximately 250,000 barrels per day. The difference would wipe out the over-production and correct many of our present troubles.

* * *

"The Federal Trade Commission has rendered valuable service in preventing the elimination of competition. Its officers are continually on guard watching for mergers and purchases which might wipe out competition. Should it not be just as clearly their duty to prevent the elimination of competition by other means. If the Standard Oil Company's statement is true that a continuation of present conditions will 'Bring disaster to many in the industry' why shouldn't the Federal Trade Commission investigate and report to the politicians that, instead of the oil industry being controlled, it is and has been running wild and that wise and proper attention should be given the subject at once. The President of the United States has said that the industrial welfare, prosperity and safety of the whole people is linked with the welfare of the oil industry.

"There are about 315,000 producing oil wells in the United States, averaging about 8 barrels per day. There are 380 wells in the Seminole, Bowlegs and Earlsboro section producing 353,447 barrels or an average of 930 barrels per well; 215,227 wells scattered through many states are producing approximately 142,000 barrels, or an average of about 28 gallons per day. We know that thousands of these wells are being operated at a loss and will be abandoned. They are as necessary to the permanent welfare of this country as the Navy and yet what are we doing about it?

It is becoming such an economic scandal that even the Hearst papers that are generally engaged in critical hostility to corporations are beginning to denounce the oil industry as a whole because it fails to handle in a business-like way its own economic problems and in an editorial the same papers demand that "Our Nation should regulate the output and price of its oil."

Coming Meetings

Georgia Independent Oil Marketers Association, Ansley Hotel, Atlanta, Ga., May 17, 18.

Association of Natural Gasoline Manufacturers, Mayo Hotel, Tulsa, Okla., May 24, 25, 26.

Virginia Independent Oil Men's Association, Hotel Murphy, Richmond, Va., June 13, 14.

West Virginia Oil Marketers Association, Kanawha Hotel, Charleston, W. Va., June 15, 16.

Standardization Conference, American Petroleum Institute, Broadmoor Hotel, Colorado Springs, Colo., June 15, 16, 17.

Indiana Standard Cuts Gasoline 2c, Oil 1c

CHICAGO, May 10.—Its third reduction in tank wagon and service station prices of gasoline this year was announced by the Standard Oil Co. of Indiana on May 10. This reduction was 2 cents per gallon on gasoline throughout its territory. The standard on the same day also reduced kerosene prices 1 cent throughout its territory, as well as all naphthas and furnace oil 1 cent.

The other general changes this year on gasoline have been cuts of 1 cent each on March 1 and Jan. 12.

Kerosene was reduced in varying amounts generally throughout the territory on Jan. 12, the cuts ranging from 4-10 cent to 1.5 cents per gallon. A cut made on March 14 ranging from 2-10 to ½ cent was effective in only three states: Illinois, Iowa and Missouri.

No advances in prices of gasoline nor kerosene have been made this year.

* * *

OMAHA, May 10.—On May 10 Standard Oil Co. of Nebraska reduced tank wagon and service station prices of gasoline 2 cents per gallon, and kerosene 1 cent through Nebraska.

Last previous change on gasoline was a 1 cent cut on March 1.

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DENVER, May 10.—Continental Oil Co. on May 9 advanced service station price of gasoline at Denver only 1 cent, to 18 cents, including 3 cent state tax. Tank wagon price remains unchanged at 17 cents.

Four Speakers on Kansas Jobbers' Program

WICHITA, Kans., May 9.—A. C. Carpenter, Lesh Oil Co., Ottawa, Kans., president of the Kansas Oil Men's Association, has announced speakers for the meeting of the association here May 12 and 13.

The afternoon of May 12 Dr. Gustav Egloff, Universal Oil Products Co., Kans., will speak on "Source of Motor Fuels and Their Properties," and Frank W. Lovejoy, Vacuum Oil Co., New York, will give a merchandising talk entitled, "The Crystal Gazer."

The afternoon of May 13, Warren C. Platt, editor, NATIONAL PETROLEUM NEWS, will speak on "Oil Legislation," and James A. Gilmore, Chicago, executive secretary, American Oil Men's Association, on "Looking Forward."

Officers and directors are to be elected May 13 morning. A banquet and ball will be May 12 evening with Mr. Carpenter as toastmaster.

Joint Development of Pools Sanctioned In New Draft of Texas Law

By Paul Wagner
N. P. N. Staff Writer

AUSTIN, TEXAS, May 7

COOLING operations that would promote conservation of any natural resources, and tend to prevent their waste, or which are in the interest of public welfare, have the sanction of the Oil and Gas Division of the Railroad Commission of Texas, which administers the states conservation laws.

This was made plain at a meeting here today, at which time H. E. Bell, chief supervisor, submitted to the Railroad Commission and representatives of the petroleum industry tentative draft of a new law to be introduced in the extra session of the legislature beginning May 9.

Mr. Bell, who assumed individual responsibility for sponsoring the bill, included the proposal on pooling agreements among a number of other suggested changes in the Texas statutes. The idea, he said, was inspired by pronouncements of President Coolidge and the Federal Oil Conservation Board at Washington and finally by the industry's position with regard to state legislation as it was evidenced at the Tulsa meeting of the American Petroleum Institute.

The proposal of Mr. Bell was described informally at the Austin meeting as a constructive step, especially because it makes no attempt to enforce pooling operations or other forms of joint development. The section of the bill in which this operating phase is discussed merely provides the machinery whereby agreements may be brought before the commission for approval and the interested companies thereby aided in working out their problems. The part of the proposed new statute which deals with such agreements reads:

"It (the Railroad Commission of Texas) shall examine into and pass upon any and all agreements by persons, firms, associations, or corporations owning or having an interest in oil or gas in any particular locality in this state, which such parties may submit to it, looking to the conservation of such natural resources and the prevention of waste thereof, or the prolonging of the life of the production thereof by means of joint exploration, development or operation of the properties concerned, or by fixing a program for the exploration, development or operation or safeguarding of such minerals.

"If said commission shall find that the agreement submitted will promote conservation of such natural resources, will tend to prevent waste of either of them, or is in the interest of the public welfare, it shall approve same by an appropriate order made and entered of record, and the agreement so approved and the carrying out of same shall be lawful."

Although representing an entirely new phase of legislation, the proposal of Judge Bell resulted in no extended discussion and, by the very fact it created so little comment, may be considered to have the tacit approval of oil operations. The oil company representatives gave no indorsement to either this phase of the proposed statute or other changes proposed, taking the position they are not sponsors of the bill and that in general they are opposed to legislation whereby government becomes a factor in industry. They recognized, however, in the general discussion, that we already have statutes affecting industrial operations and a number of oil men present paid high tribute in their remarks to the sincere and sensible application of Texas regulations by the Railroad Commission and its Oil and Gas Division.

PRESIDENT W. S. Farish, of the Humble Oil & Refining Co. in referring to certain provisions of the bill which had provoked discussion, declared that the natural attitude of the business man is to be a "little resentful of government interference"; but he made plain that it would not be correct to say that the petroleum industry, or those present at the meeting, found the Texas bill objectionable. Mr. Farish declared, on the other hand, that "the spirit of the age is such and the situation is such that there is no escape from some sort of regulation."

An oil industry committee appointed to confer with Judge Bell as to details of the measure and consider changes which might be desirable in the legal language, was headed by Judge A. S. Hardwicke of Magnolia Petroleum Co. of Dallas, as chairman. Other members being E. E. Townes of Houston, general counsel of Humble Oil and Refining Co.; J. S. Bridwell, Independent producer of Wichita Falls; Adrian C. Moore of Houston, division manager of the Rycade Oil Corp., and J. A. Elkins of Houston, representing the Humphreys Corp. and others.

Judge Bell, in explaining the calling of the conference, said it was necessary to draft a new measure to take care of a situation resulting from the penalty for violation of the present statute having been accidentally left out of the statute by the 1925 legislature. A number of provisions of the old law had become archaic, he said, and the need no longer existed for them. The new draft leaves them out altogether, or some of them have been carried forward in clarified form, and still others that are entirely new have been added.

THE new draft modifies or amplifies operating rules and would give the commission power to preven, among other things, unreasonable waste of gas, such as permitting a well to flow 20,000,000 cubic feet of gas to produce a trickle of oil; to require necessary precautions to prevent blowouts and gas wells getting away; to require proper plugging of abandoned wells, giving in some cases fee owners or owners of neighboring properties the right to plug a dangerous well if the owner of the well fails; to regulate size of shots given oil wells where excessive shots would damage a field.

As presented by Judge Bell, the bill also contained provision for the revoking of pipeline certificates showing compliance with conservation laws after subsequent failure of operator or owner of well or wells to continue such compliance. The law now provides for the issuance of such certificates but has no machinery for their revocation.

Article 6 of the proposed law would prevent the oil and gas division ever becoming a political ground in the future. As read to the conference by Judge Bell it provides that:

"The Railroad Commission shall employ a chief supervisor of the Oil and Gas Division to enforce the provisions of this act and all oil or gas conservation laws of Texas, and all rules and orders of said commission made thereunder. He shall also perform the duties placed upon the pipeline expert as set out in the pipeline statutes of this state.

"The commission may also appoint a chief deputy supervisor and such other deputies as may be necessary to aid the Chief Supervisor in the performance of his duties, and shall employ such other assistants as may be necessary. The salary of the Chief Supervisor shall be $..... per annum, that of the Chief Deputy Supervisor shall be $..... per annum, and that of the deputy supervisors shall be a sum not exceeding $3600.00 per annum. No one shall hereafter be appointed as Chief Supervisor who has not had at least ten years' experience in some line of the oil or gas business, or in the legal or some other profession calculated to fit him for the performance of his duties. No one shall hereafter be appointed as Chief Deputy Supervisor who has not had at least

five years' experience in oil and gas field work, and no one shall hereafter be appointed Deputy Supervisor who has not had at least three years' experience in oil and gas field work, a substantial portion of which shall be in the drilling or production department. All applicants for appointment as Chief Deputy Supervisor or Deputy Supervisor, before being hereafter appointed by the Railroad Commission, shall submit themselves for examination by the Chief Supervisor, or under his direction. Such examination shall relate to the applicant's experience in and knowledge of oil and gas conservation problems, and shall look to the special problems of the field or district in which he is to serve; and no such applicant shall be appointed by said Commission unless and until he has been approved by the Chief Supervisor and has been by him recommended for such appointment."

Atlantic Says Gasoline Demand Equals Output

PHILADELPHIA, May 10.—A statement showing that present consumption of gasoline in this country has caught up with production and that the end of August will find reserve stocks depleted by more than 13,000,000 barrels, was issued today by R. D. Leonard, vice-president, Atlantic Refining Co.

"The official figures of the national gasoline situation published last week by the U. S. Bureau of Mines, throws significant light on the unprecedented demand for gasoline in this country," said Mr. Leonard.

"Due to an unusual gain in consumption during the early months of this year, the stocks on hand at the end of March were but slightly in excess of 52,000,000 barrels. Continued withdrawals from these national reserves at nearly the present prevailing rate, without consideration for any natural increase in consumption, will reduce the supply on hand at the end of August by approximately 13,000,000 barrels.

"Perhaps the most remarkable index of probable conditions in the gasoline market is the so-called days' supply which translates reserve stocks on hand into the actual period of time they will last under normal demand. From a peak of 57.3 days in January of this year, these gasoline reserves fell to 50.6 days' supply at the end of March, according to government figures for the entire country; and it is estimated, on the most liberal calculations, that stocks on hand will be depleted under the increasing demand this summer to a new low of 38.8 days' supply.

"Already, the gasoline market is reacting upward, and it is not at all unreasonable to predict that anticipated summer demand will find this market strengthened to a point even slightly in excess of recent years."

Humble Pipeline Stations Arrange For Safety and Economy

HOUSTON, May 6.

PUMPS in stations along the new 400-mile transportation system of Humble Pipeline Co., from McCamey, Upton county, to Corpus Christi, on the Gulf coast, will be located in separate rooms from the engines to insure protection from fire as well as from hydrogen sulfide poisoning.

The necessity for guarding against hydrogen sulfide poisoning is a phase of the oil business that materialized acutely coincident with the development of fields in the Permian salt basin region west of San Angelo. Precautionary measures have been necessary to protect oil workers from gases resulting in acute poisoning and, in some instances, death.

Whenever gases escape around oil wells in the Crane-Upton county territory it is general practice for workers to wear gas masks. At the Gulf Production Co's. camp in the McElroy ranch field, a gas purification plant is being installed by the Koppers Construction Co., Pittsburgh, to treat sufficient gas for camp purposes and for a supply to be used in gas engines on the property. The plant is expected to be in operation by June 15.

Humble's plans to guard against hydrogen sulfide poisoning in the transportation of west Texas oils are the first to be announced.

Separation of pumps and engines in Humble pipeline stations will make separate buildings or compartments for the auxiliaries unnecessary as they are to be located in the engine room, and the generators from which they will derive their power are to be driven from the main engines.

This will make a saving and be more convenient than having separate auxiliary engines.

Each station will contain three 400 h.p. oil engines, direct connected through flexible couplings to 20,000 or 25,000-barrel, horizontal triplex reciprocating plunger pumps. It is planned to have two of these engines running at a time, the third being used as a standby.

Humble has in mind the remoteness of many pumping stations from sources of repair parts.

Fuel for the main engines will be taken direct from the pipeline stream through elevated tanks. This will enable the operators to keep accurate records of fuel operating costs. Each station will be provided with the necessary tankage for checking the incoming stream. It will also have structural steel, iron manifold buildings housing necessary piping and gate valves used in controlling and switching both incoming and outgoing streams as well as the oil between the main pumps and tanks.

The customary plan will be followed of providing each pipeline station with cottages for comfortably housing employes. These will be equipped with lights, water and other modern conveniences.

Humble's policy of supplying housing accommodations according to the requirements of the employees was described on page 56 of the June 2, 1926 issue of NATIONAL PETROLEUM NEWS. The company builds 3, 4 and 5 room cottages at pump stations, where workers may choose houses that conform to their family needs. The houses are of type construction, the smaller ones being laid out so that one or more additional rooms may be built on as needed.

THE McCamey to Corpus Christi pipeline project was first announced on page 36 of the April 6, 1927 issue of NATIONAL PETROLEUM NEWS in connection with the underwriting of $25,000,000 in bonds of the parent Humble Oil & Refining Co. It was then announced that the pipeline would be about 400 miles in length, capable of handling 40,000 barrels of crude daily and that it will follow an almost direct route from McCamey to the Gulf.

Detailed plans now available show that the Humble will build up its system between the Kemper tank farm in southwestern Reagan county and the McCamey terminal, in southwestern Upton county, where a 10,000 barrel fuel oil refinery is operated. The line will call for additional machinery at both the McCamey and Kemper stations, the last mentioned now being the western terminus of the Humble's west Texas line, which connects with its original trunk system at Comyn, Comanche county, 190 miles northeast.

From Kemper, the new line will head southeast across the Edwards plateau to Corpus Christi, crossing the Balcones fault area west of San Antonio and east of Del Rio. Along this route the elevation drops from approximately 2600 feet above sea level at McCamey to 800 feet at Hondo, the Coastal plain flattening out more toward Corpus Christi.

Six new pumping stations will be required along the 350 miles of system between Kemper and the cast. These will be spaced from 45 to 65 miles apart, depending on topography. The stations will occupy plots of ground of approximately 30 to 40 acres. No announcement has been made of their locations, because sites have not been purchased in every instance.

The line will be of standard weight, with screw ends. It was decided to build a screw line rather than a welded system because of the long hauls necessary through sparsely inhabited country to be crossed; the transportation of carbides, generators and oxygen tanks materially adding to the cost.

The Oil Industry Today and Tomorrow
The Trouble, The Cause, The Cure

By W. H. Gray, Tulsa
President, National Association of Independent Oil Producers

THE oil industry is in a very pessimistic frame of mind. I do not think that this wave of pessimism is altogether warranted. Petroleum transportation facilities are taxed to the utmost in moving the raw products to the refineries and the refined products to the market.

Consumption is far in excess of what it was in 1923 when we had the most disastrous situation which the industry ever coped with. One must view the situation from a facts standpoint and not a theoretical point of view. One rarely ever picks up a paper but what he sees some pessimistic statement from some one who is at the head of, or connected with, some large company engaged in the production and manufacture of crude oil; but do they really mean it?

Are they serious about it? Do the activities of the corporations which they head bear witness to the sincerity of their prognostications? I do not think so for these reasons:

There is scarcely a seaboard refinery which has slackened to any appreciable extent its drilling program. There is the greatest activity in the construction of pipe lines to remote sections of the country to secure additional supplies of oil ever witnessed within the history of the industry. The Humble Oil & Refining Co., a subsidiary of the Standard Oil Co. of New Jersey, is laying a 10 and 12-inch pipe line from remote fields in Texas to its Corpus Christi-Laredo line. This new line will be approximately 400 miles long. The same company recently announced a program of a line of similar dimensions all the way from its Baytown refinery near Houston, to the Panhandle in Texas; thus it can be seen that they are advancing from Corpus Christi Bay westward along the Rio Grande almost to El Paso, and from Houston they are advancing with a new and through line into the great Panhandle area with Amarillo the center, a distance of almost 700 miles.

In order to complete this ambitious program $25,000,000 worth of bonds were issued. Many of these fields are hundreds of miles from transportation. The Gulf Pipe Line Co. is building a line approximately 300 miles long running into the Panhandle area and has just recently announced the building of a line into southwest Texas beyond San Angelo into what is usually called the Big Lake area. This new line will be more than 400 miles long and will cost around $10,000,000.

There is a tremendous movement of oil in tank cars from all parts of Texas and Oklahoma to the Gulf coast, all of which is absorbed as quickly as it arrives. In addition to this great transportation movement, let it be known that there is very little oil going into storage as compared to other periods of temporary over-production. Again, Mexico, which was a great factor in the disaster of 1920 and also of 1923, has almost disappeared as a market factor in the United States today.

If the industry is in such dire distress as some of the leaders would have us believe, then why this feverish haste in building tremendous transportation facilities into the remotest areas of western Texas in order to loose what they claim will be another flood of oil? The actions of the seaboard refiner do not jibe with the pessimistic statements being given out. Explanations are due and should be forth-coming.

What is lacking in the industry is fairness, a better spirit, a little more optimism and a little more courage on the part of the men who are looked upon as leaders, and if they sincerely believe the condition to be as desperate as many of them say it is they should put their hand upon the steering wheel and compel the industry to follow a safe and profitable policy for the industry as a whole, not by undertaking to destroy the small operator with violent price fluctuations but by co-operating in a movement for the best interests of all.

IN view of the fact that approximately 80 per cent of the oil produced in the United States is produced by about 12 companies it would seem to be comparatively easy for at least five leaders of these 12 companies to bring about a curtailment which would relieve a temporary over-production. But quite to the contrary a number of these 12 concerns are more interested in gathering up additional acreage and additional production than they are in the general welfare of the industry as a whole, and in the mad scramble to develop new fields and to fortify themselves with additional crude supplies and vast amounts of acreage which will probably produce oil they do not see the danger of over-production until it is upon them. Then when they do see it they have no plan whatever for coping with the situation, the result being a wave of pessimism and the ancient and archaic rule again brought out as a remedy—the remedy of the Standard Oil Co. of 40 years ago, the remedy of the Standard Oil Co. of 20 years ago and applied by the Standard Oil Co. today—cut the prices to a point below the cost of production.

This policy of cutting the price below the cost of production almost over night without warning might have been a wise policy 40 years ago or 20 years ago but as for putting it into effect today it is unwise, uneconomic and destructive. The disaster to the industry by reason of cuts of 55 per cent in the price of crude, 35 per cent in the price of refinery gasoline, 60 per cent in the price of natural, or what is commonly known as casinghead, gasoline and 29.5 per cent in tank wagon price simultaneously within a period of 30 or 40 days must and will ultimately have its effect upon industries and, therefore, the public are interested as well as the industry.

I DO not believe the drastic cuts in the price of crude and refined oil, such as have been made by the leading purchasers of crude oil in the last few weeks, are justified. A proper survey of the situation and proper co-operation by men determined to do or die for their industry would have avoided the present situation and unless those who are accredited with being leaders of the industry are willing to put their shoulders to the wheel on behalf of the industry as a whole they must not be surprised if the government steps in and does with a lot of $250 month clerks what men who are drawing from $50,000 to $100,000 a year as salaries declined to undertake or have failed to accomplish.

Under the merciless ax applied again and again so relentlessly to the price structure by the great seaboard purchasing agencies, with their great transporting systems under their immediate and complete control, the small operator of the small well, like the buffalo which once roamed over the oil fields of the west, is rapidly passing, to be seen in the picture no more.

When the present wave of pessimism has passed perhaps there will be nine companies producing 85 per cent of the crude oil produced in the North and South American continents instead of 12 now producing 80 per cent and some of the large ones will have been absorbed and many smaller ones will have sold out to the larger units. The process of elimination and absorption goes on at an every increasing rate.

THE small producer, operating the small well, naturally looks to the leaders of the large institutions in the industry for his guidance. For many years the voice of these leaders was raised in defense of the small well. It was agreed by all that this was the back-log of the industry; that these

fields which were only partially exhausted would at some future time be the mainstay of our country. However, no longer do we hear any of the leaders of the large institutions preaching the doctrine of salvation of the small producer, or the preservation of the small well. As one of these leaders said to me a year or so ago in conversation, "I am not looking for small game, I am gunning for elephants," by which he meant he was not bothering with small wells but was looking for the big ones.

THE failure of the leaders of the large operating companies to maintain a price structure which will preserve the many thousands of small wells in the hands of small producers throughout the country has caused many of the small produces to despair of any assistance by these leaders and many of them are turning toward government control of the industry as the only remedy which will give permanent relief.

There are but two remedies for relieving the present situation and preventing a recurrence of same worthy of consideration. One is honest and faithful co-operation of the leaders of the 12 large companies controlling 80 per cent of the production of the North and South American continents with the numerous small producers who have the other 20 per cent to curb production and keep it within bounds of domestic and export requirements. The other remedy is to accept government regulation and supervision which ultimately must and will mean government monopoly of the industry. The method recently used of cutting the price below the cost of production must not be used again; this must be the last time.

It does not take smart men to cut the price of any commodity when a slight over-production of raw material occurs, when three groups of companies, substantially owned by the same stockholders, whose daily requirements are 35 per cent of the gross production of that commodity and when the three groups of companies are dominated in policy by four or five officers elected by the same stockholders. It does take men of courage, determination and loyalty to the industry as a whole to work out and put into effect a plan which will avoid such destruction as has been wrought by the recent drastic reduction in prices of both crude and refined products. IT CAN BE DONE.

It is the hope of the small producers throughout this nation that petty jealousies between leaders of the large organizations will be laid aside and a spirit of co-operation entered into such as has heretofore not been in the industry since the great war. The small producer stands at all times ready and willing to do his share for it is he that suffers and sacrifices the most in these violent fluctuations in price structure.

Extent of Surplus Is Realized

HOUSTON, May 5.—Encouraging in its seriouness—that is the diagnosis of Ernest W. Marland of the present crude oil situation.

The head of the Marland Companies finds the seriousness of over-production is beginning to be generally realized, he said in Houston, May 3; and in that realization he takes comfort—it augurs well for the eventual recovery of the patient.

Mr. Marland said he had no illusions about the length of the depression, which he expects to be an extended one.

Briefly summarized. Mr. Marland's views are that the sooner the true gravity of the situation is fully realized the quicker will function the economic machinery that will turn the industry back towards an earnings basis.

Parenthetically, however, the remedy for the depression must be predicted on a more stable basis than temporary declines in daily average production and upward swings of crude oil markets, which frequently follow them. It has been estimated that the west Texas salt basin, where crude now averages about 80 cents a barrel at the well, would be pushed up to 500,000 barrels daily production in six months on a market of $1.25 a barrel.

Mr. Marland gave out a newspaper interview in Fort Worth a week ago, at which time he pointed to the west Texas area as the most favorable territory in the country for low cost production.

Within that area are many proved and potentially productive fields in which the prospector has speculated on the difference between the prices paid for wildcat and semi-wildcat acreage; and in a number of which values have been increased many times in comparison with original costs of drilling blocks.

The Marland policy of selling protection acreage against wildcat wells inside the company's drilling blocks has been generally kept in hand to the extent that sub-lessees seldom acquired smaller tracts than 160 acres; but some other sellers of protection acreage have chopped tracts into pieces as small as 40-acre and 80-acre tracts.

Mr. Marland considers his policy highly advantageous to his stockholders, but admits that his company's acreage sales have contributed their share to the flood of oil which, in turn, has created the present over-production of crude.

Because of the Marland policy of making acreage turnovers, he says the net capital investment of his company in the purchase and carrying of leaseholds is much lower than that of many other large operators, among them major units in the industry.

The suggestion was made to Mr. Marland that the sale of percentages in drilling blocks rather than the offering of protection acreage out of them might serve the purpose of reducing capital investments in leaseholds and at the same time protect the industry against such floods of oil as now apparent.

"That may be a good idea," Mr. Marland said without definitely committing himself to such a policy.

Mr. Marland was in Houston on his return to Ponca City headquarters, after an inspection trip to Texas fields. He was accompanied by officials of the parent company and the subsidiary Marland Oil Co. of Texas, which last mentioned maintains offices at Fort Worth. Mr. Marland is president of both the parent company and the Texas subsidiary.

Signs of Improvement Are Pointed Out

CLEVELAND, May 9.—Several encouraging signs for improvement in the oil industry are seen by the Atlantic Refining Co. in the developments of the past week, according to W. D. Anderson, vice president of the company. Mr. Anderson sent the following cablegram to their representatives abroad.

"There were several favorable developments the week, ended May 7. First, the California gasoline price war was settled; second, Magnolia Petroleum Co. found it necessary to increase price it was paying for crude; third, market prices of oil securities was very much stronger; fourth, there was better feeling evident in all primary markets with slight price increases; fifth, Government figures just released for March show less gasoline in storage than the previous year in terms of days' supply; sixth, Texas Oil & Gas Commission have called a meeting to restrict wasteful crude production in their state and it is believed the Oklahoma state Commission will do likewise promptly.

"Combination of all these factors may safely be interpreted to indicate real effort at prompt adjustment of the present precarious position of the oil industry. It seems entirely probable American and foreign buyers, both of whom have been purchasing for some time from hand to mouth, may be forced into the market immediately to replenish their low stocks and following this, nearby gasoline prices will surely move up to a higher level.

"As against these favorable conditions, the only unfavorable one is increasing production in Seminole area but it is axiomatic that no industry can continue indefinitely on a basis where only 10 per cent is operating at a profit with the balance suffering real and substantial losses."

CHICAGO, May 6—Johnson Oil Refining Co. announces that plans are being made to build a bulk plant at St. Louis to serve that territory.

California Producers Have Shut In 90,000 Barrels a Day

By William E. Green
N. P. N. Staff Writer

LOS ANGELES, May 7

DURING the week approximately 24,000 barrels of settled production, all refinable crude, was shut in or pinched in at Brea Canyon in Orange county and in the Ventura Avenue field. It is expected that about 12,000 barrels of settled production at Dominguez will be closed in also during the next week or 10 days. Dominguez is only making about 18,000 barrels a day now, and this likely will be reduced to about 6000 barrels.

Apparently all of the major companies are shutting in all of the settled production possible, as experience has proved that producing wells in California can be closed in for any period without injury. It is reported in Los Angeles that a large number of wells in northern heavy oil fields, may also be closed in.

On May 1, shut in production in California had reached a total of 66,000 barrels, daily average, and with the additional wells shut in this week and those that were pinched in, the total reaches about 90,000 barrels, with indications that the total will exceed 100,000 barrels a day before the end of the month.

At Brea, the shut in production was divided as follows: Union Oil Co., 5250 barrels; Shell Co., 650 barrels, and General Petroleum, 2000 barrels. At Ventura Avenue, the shut in and pinched production included Shell Co., 7000 barrels; Associated Oil Co., 8000 barrels, and General Petroleum, 1500 barrels. The first wells were shut in last Monday and the process has extended through the week, and for that reason, the daily average production in California this week will not feel the full effect.

THE shutting in program has caused the laying off of a lot of field men, both in the production and the gas forces. There is a movement among the refineries to reduce forces. During the week, Shell Co. laid off about 600 men at its Martinez plant, stopping construction of new stills. The California Petroleum Corp. also has laid off men at its refinery in the Los Angeles district. The Richfield Oil thinned down its refinery force, as well as reducing in practically every department.

The large Union and Shell plants in Los Angeles districts are running as usual and are not reducing runs, and the Shell is going ahead with construction work at its new refinery adjoining the old plant.

The Union's small refinery at Brea has been reducing forces to a minor extent. The Richfield closed down the old Mutual plant near Long Beach, which it had been operating under lease. The Hancock refinery at Long Beach has been idle for several weeks. The Standard's El Segundo plant has reduced forces and runs to a minor extent.

From present indications, the Seal Beach peak will be reached within the next three weeks, and probably will not reach 100,000 barrels, but very likely will exceed 75,000 barrels. A check of field conditions this week shows that by next Monday nine pipe lines will be operating in Seal Beach, both ends. The Associated, Richfield, and Standard lines are operating from the West end of the field, while the town lot area, or Alamitos Heights, east end of field, is being served by California Petroleum, California Eastern, Pan American, Union, Shell and General Petroleum. Pan American and Shell have 8-inch lines into the town lot area, while the other lines are 6 inch.

THERE are approximately 182 wells drilling in the entire Seal Beach field, and of this number, about 117 belong to companies operating pipe lines or to Independents who have assurance their production will be run. This leaves about 65 wells drilling with no arrangements at this time to run their oil. The companies drilling wells which either own lines or have assurances that their oil will be run, follow: Standard, 5 wells; Marland, 18; Associated, 8; Pan American, 31; California Petroleum, 9; George Getty, 8; Paul Getty, 4; California Eastern, 13; General Petroleum, 11; Superior Oil, 6, and Universal Consolidated, 4. Others may have made arrangements to have their oil run, but if they have, the fact has not been made public.

The State Mining Bureau, to May 1, had issued permits for the drilling of 189 wells at Seal Beach, not counting the earlier permits before the field came into the production column. Of the total number issued, 152 permits were given during March and April. There are a number of derricks standing and also a number of locations. It was reported from the field today that at least one dozen wells were standing cemented and ready to drill out when arrangements are made to run the oil.

Col. Humphreys, Wildcatter, Dead

Col. Albert E. Humphreys

(By Telegraph)

TULSA, May 10.—Col. Albert E. Humphreys, one of the oil industry's most colorful characters, died Sunday night in a Denver hospital where he had been taken after accidentally shooting himself earlier in the day. The accident occurred as he was packing guns and other equipment at his home in preparation for a trip to his hunting lodge at Wagon Wheel Gap, Col.

Col. Humphreys was born in West Virginia in 1860. He became widely known in the petroleum industry when he opened the Mexia field of Texas, although he had had considerable success earlier in other fields, notably the Big Muddy field of Wyoming, which he opened. Following his Mexia venture, he figured prominently in developments at Powell and Wortham, both in Texas. His holdings in that territory were sold to the Pure Oil Co.

Col. Humphreys in early life was a school teacher in West Virginia and later continued his education at Ohio Northern University. He was prominently identified with development of iron deposits in the Mesaba country of Minnesota. He made and lost a large fortune in this venture and several years later paid off that indebtedness with the fortune he made at Big Muddy.

Of a deeply religious nature, Col. Humphreys devoted much of his fortune to furtherance of religious and social welfare work. He established missions in Charleston, W. Va., and other cities for the relief of the homeless. He established the Humphreys Foundation in 1922 to conduct under one head his religious and charitable work.

He is survived by his widow and by two sons, A. E. Humphreys, Jr. and Ira B. Humphreys. At the time of his death he was president of the Humphreys Corp. active in testing unproven acreage in several states. For several years he had made his home in Denver.

LOS ANGELES, May 6.—The Midway Gas Co. submitted the only bid Monday to buy the gas from the naval reserve in California.

Gasoline Manufacturers to Continue Research Campaign

Staff Special

TULSA, May 9

THE Educational and research program of the Association of Natural Gasoline Manufacturers which has been undertaken during the past year, is expected to be continued at least another year.

At the coming convention of the organization at the Mayo hotel, Tulsa, on May 24, 25 and 26, a complete report of accomplishments to date will be given the gasoline manufacturers and recommendations are expected to be made that the campaign be continued.

At the time of the annual convention last May there was a great deal of discussion of the anti-knock qualities of various types of gasoline throughout the industry. Refiners with cracking processes were beginning to market straight cracked gasoline as a premium product because of its anti-knock qualities.

Preliminary experiments appeared to indicate that natural gasoline also imparted some anti-knock qualities to motor fuel when blended in certain percentages. Dr. G. G. Brown of the University of Michigan, presented a paper at the last convention in which he compared natural gasoline blends with benzol blends.

AS a result of the convention action the association employed Dr. Brown and Dr. E. H. Leslie of the same school, to conduct an exhaustive series of experiments along the same line. Setting aside a fund of $25,000 for the work at the University, the association obtained the services of four fellows doing graduate work at Michigan in the department of chemical engineering. A large amount of special equipment in the form of motors, dynamometers and the like was purchased for the investigations.

Results of the research program have been announced from time to time during the past year by Dr. Brown at various meetings. He has been before the Society of Automotive Engineers, the American Petroleum Institute, National Petroleum Marketers Association, Michigan Independent Oil Men's Association, Wisconsin Jobbers, American Oil Men's Association and the American Chemical Society. He was invited to address the Western Petroleum Refiners Association but found it impossible to attend that convention.

IN addition to the papers presented by Dr. Brown, the association has pushed its educational campaign through advertisements in the various trade journals. It has made the results of the research program available to manufacturers and jobbers through printed bulletins from time to time.

The association program has come at a very opportune time in view of the large increases in production of natural gasoline. With new flush fields augmenting the supply of natural gasoline, leaders among the manufacturers feel it to be highly important that a wider use of the commodity be obtained through wider recognition of its merits.

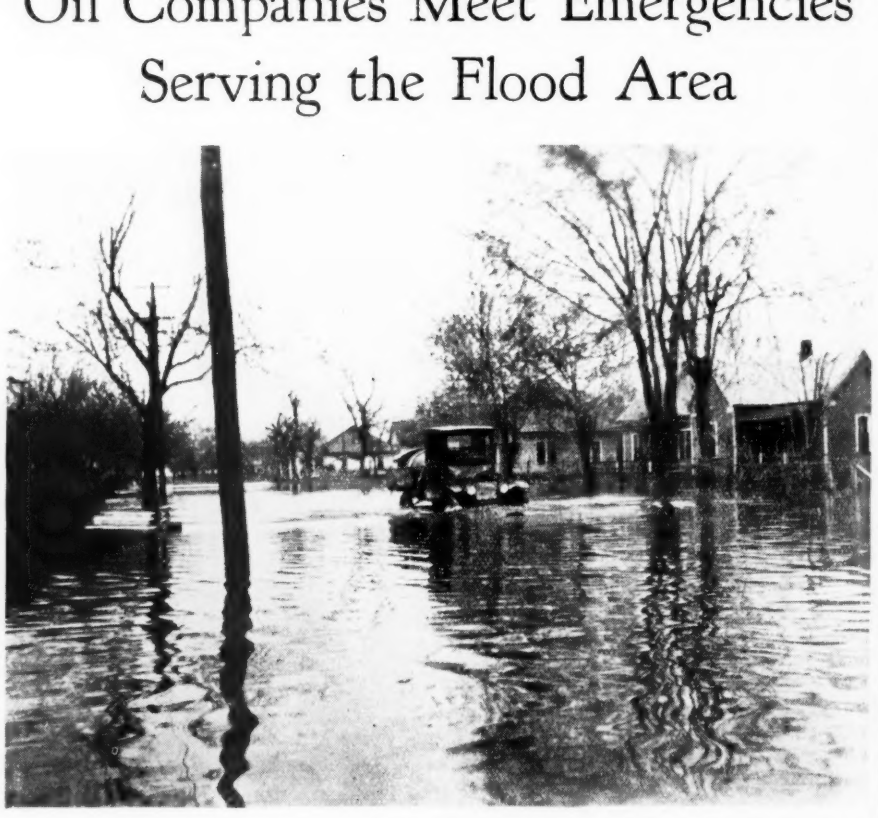
The Association of Natural Gasoline Manufacturers was organized in April, 1921. Its membership has shown a steady growth since that time because of the constructive nature of its work in standardizing the product offered for blending, popularizing the commodity with the jobbing trade, fighting adverse legislation, shipping regulations and similar undertakings. At the present time its membership manufacturers approximately 70 per cent of the natural gasoline produced in the United States. The association has a large membership in California in spite of the long distance of that field from the association headquarters. Large groups of California manufacturers attend the convention in the Mid-Continent each year.

An important accomplishment of the past year was in standardizing the equipment and method of testing natural gas for its gasoline content. Changes in the present code were presented to the Natural Gas Association of America and approved by that body. The code as amended is now the joint code of the two organizations.

Lately an exhaustive series of tests has been conducted by the technical committee on methods of arriving at the gravity of gas. Results of this work will be presented at the coming convention.

A complete program for the coming three day convention will be published in next week's issue of NATIONAL PETROLEUM NEWS.

Oil Companies Meet Emergencies Serving the Flood Area



CLEVELAND, May 9.—Oil companies marketing their products in the flood belt along the Mississippi are meeting a double responsibility, maintaining their distribution of gasoline and kerosene under flood conditions wherever they can, and also in many cases lending their facilities for relief work to aid those who have been driven from their homes by high water. Companies with barges and river craft which they use in business in many cases have turned these over for relief work.

When the full story of the flooded Mississippi has been written, considerable credit will go to the oil companies which have thrown their resources into the relief work, according to brief information coming from the flood belt now.

The photograph above is a Pierce Petroleum Corp. truck maintaining its service under handicap for those in need in a small town near Cape Girardeau, Mo. This district is about at the northern end of the flood belt, according to Guy S. Forcier, St. Louis, in charge of marketing operations in this district for the company. While it suffered from the overflowing river, it has not felt anything like the effect of the flood as experienced in a great territory along both sides of the Mississippi to the south.

Tennessee Jobbers, Opposed to Rebates, Support State's Price Fixing Law

By Ward K. Halbert
N. P. N. Staff Writer

NASHVILLE, TENN., May 7 GOV. AUSTIN PEAY of Tennessee is peeved. On the face of it, that does not look like big news but it is, because he is in a position to do the oil industry much harm in the next few months and is in exactly the frame of mind to do it. Moreover, he is a keen politician and has the support of a substantial element of voters and tax payers in his state.

The Tennessee legislature created a new division in the state tax department to fix gasoline prices in a bill passed April 5. This was an administration bill but was passed even though the Governor lacked the support of the powers in each house.

The Governor signed the bill April 8 and was restrained from enforcing it the next day by Judge John J. Gore of the United States district court. Four oil companies, Standard Oil Co. of Louisiana, The Texas Co., Pan American Petroleum Co., and National Refining Co., attacked the law on constitutional grounds. Legal points have been argued but no decision has been handed down. If the court upholds this law, the oil industry is "let in for" the legal fight of its life, because many other states will try the same thing.

If the law is judged unconstitutional, the oil industry will not be through with Gov. Peay. He has set about to put gasoline in the same class with gas and electricity. He knows it has never been done and therefore it will be hard to make it a public utility.

"Gasoline is in more general use than gas and moves more passengers than the railroads in Tennessee," was an argument offered by one of the state's attorneys in the recent hearing.

Gov. Peay in his message to the General Assembly last January, said, in part:

> "I recommend proper legislation to control the distribution and price of gasoline. * * * Our people have been victimized long enough in the excessive cost of gasoline. * * * This commodity, to all effects and purposes, is now controlled by a monopoly. * * * Some state must become a pioneer in this field of regulation. Let Tennessee take the lead, she is the Volunteer State."

But the thing that piqued Peay was the sting of a personal rebuke. There is no record of an incident that happened last November when the Governor was seeking re-election, and promising the people of the state cheaper gasoline, but it is said to be true. He asked a high official of the Standard Oil Co. of Louisiana to reduce the price. He got a refusal, a very blunt refusal that angered him. Mr. Peay alluded to it in his message to the legislature, as follows:

> "Our people were being plundered without let or hindrance, yet the state was powerless to compel relief. We could only importune it. The Governor suffered under the shame and humiliation of our situation. No company doing business in Tennessee has any right to spurn the just demands of the people. Our present situation is intolerable and you should attack this problem from every angle to pass bills of any kind on the subject of gasoline control which are lawful and just."

When asked to explain more fully the nature of the governor's suffering, and the cause for it, Mr. Peay answered in writing to prevent being misquoted:

> "Last fall, it had come to a point in Tennessee that gasoline was too much above its cost, indeed selling higher than anywhere in the country, excepting one or two points. I intervened as governor, asking the Standard to voluntarily correct the situation. That company was appealed to for obvious reasons. Its refusal in the manner and under the circumstances caused and justified the language of my message."

History of the gasoline price in Tennessee shows one thing of importance. There have been some sharp up's and down's. The spread between the tank car price and the tank wagon price in Tennessee was 5 cents a gallon less than the average in the rest of the country in October, 1925. But, just as the Governor said, the margins were more liberal about a year later. In National Petroleum News, Nov. 3, 1926, issue, pages 92 and 93, the unusual price situation was discussed.

During 12 months in 1925 and 1926 when the Independent Jobbers in Tennessee were selling gasoline 1 to 5 cents a gallon less than oil men in other states were selling it, they were operating without profit. Many of them suffered and could not account for it except that they believed they were victims of a price war between the big companies operating in the state. Some of them thought it was a deliberate effort to eliminate the small dealers, and as a result the small jobbers tried to find a remedy in court.

A law suit between the small dealers and the large ones in Tennessee in 1926 attracted wide attention and Gov. Peay, among others, got some knowledge of the situation. Small dealers finally dropped this action to compel large companies to sell at profitable prices. Then the legislature met this year and two pieces of legislation were prepared. One bill framed by Al D. McKnight, an oil man of Murfreesboro, and majority leader of the senate, was intended to protect Independent jobbers from price wars among the large companies.

Gov. Peay and the Attorney General framed a bill to empower the state administration to fix gasoline prices in Tennessee. As mentioned before, the Governor and the legislature were not in harmony. Mr. Peay knew his bill would not be passed without the help of Mr. McKnight, and McKnight felt sure the governor would not sign his bill unless it had a price-fixing clause in it. The result was a compromise. A consolidated bill passed the senate unanimously, but barely passed the house.

The law called for the organization of a division of motors and motor fuels in the department of finance and taxation. Under the commissioner of finance there was to be a superintendent of motor fuels. This superintendent was to have such help as he needed, was to study oil marketing and refining, and was to set the gasoline price, or rule upon prices established by the oil companies. So quickly was the bill halted by restraining order that Frank S. Hall, commissioner of finance, never appointed a superintendent.

The suit of the four companies was heard April 30 by a tribunal composed of U. S. Circuit Judge Charles A. Moorman, Louisville, Ky.; U. S. District Judge Xen Hicks, of Cincinnati, and Judge Gore. Three judges are required when the constitutionality of a state law is attacked. Appeal may be taken direct to the Supreme Court of the United States.

The main arguments of the proponents of the new law were that it was not a capricious act but a sober conclusion of the General Assembly of a sovereign state; that gasoline had become so necessary and so generally used that it was now a business "affected with the public interest," and that it was practically a public utility and ought to be so considered.

The opponents of the law contended that the Tennessee legislature exceeded its power in passing a price-fixing bill; that the act itself was discriminatory because it arranged an assured margin for the oil jobber when jobbers in other lines of business had no such protection.

Judge Moorman instructed the attorneys to submit briefs and suggested that it might be upwards of two weeks before a decision would be given. The case likely will go to the Supreme Court of the United States. Gov. Peay in his message to the legislature, said, "I intend to contest whatever laws are passed to the last courts of the coun-

Gov. Peay is Strongest of Gasoline Demagogs

POLITICAL developments in Tennessee can not be measured by precedents in middle western states where candidates have exploited the oil industry for political gain. Austin Peay, governor of Tennessee, is not the first state official to declare war on the oil business but he seems to be the most powerful one.

"They do things differently down south," probably because they have to; but politics is a cherished heritage of all southern whites. They are reared to know their political "onions." Demagogs and amateurs need not apply. Knowingly, Austin Peay will not be caught breaking the laws of his own state or getting in contempt of court. He has deliberately set about to establish a legal precedent upon which to make gasoline a public utility. And he is a knowing individual.

Tennessee is just as poor, per capita, as South Dakota; it is just as dependent upon agriculture as Iowa, and it is as dry as Nebraska. But Austin Peay is not in the category of Carl Gunderson, Smith Brokhart and Charlie Bryan. He is not a "Calamity Ann." The destructive seeds of communism do not grow well in the soil of Tennessee. It is not necessarily good politics to be the enemy of big business in the south. Mr. Peay understands all that.

But the governor is a clever politician. He has to be. The 1927 legislature voted a 5-cent gasoline tax, but it was vetoed, and that helped to make Peay popular. The legislators who still get $4.50 a day for 90 days every two years in Tennessee this time voted themselves a bonus making it $10 a day. Mr. Peay vetoed that also, and the state roared with approval. Maybe he wants to be Senator. If so, he seems to have begun right. But that has nothing to do with the gasoline law.

Gov. Peay has been compared to Mussolini. The legislature has been pleased to pass some bills over his veto, but the chief executive is a man of courage and conviction, however wrong some of those convictions may be. The serious feature of the set-up is that he is in no hurry. He has promised to test the validity of his law, giving the state the right to fix gasoline prices, in the last courts of the land. His friends and his adversaries alike believe he means it.—W.K.H.

try," and John Bell Keeble, attorney for The Texas Co., said his client would carry the case on if an adverse decision results.

J. J. Lynch, Chattanooga, and John T. Cates, Knoxville, represented the state in court. Attorney General L. D. Smith did not appear. Mr. Cates was attorney general of Tennessee in 1909 when the Standard Oil Co. of Kentucky was ousted and the Standard Oil Co. of Louisiana began to do business in Tennessee. H. D. Minor of Memphis represented the Standard Oil Co.

The case is attracting a great deal more attention among lawyers and politicians of other states, than it is among the voters of Tennessee.

Although they are deeply interested in politics, the voters of Tennessee are not much concerned about the progress of law or the history of it. Attorneys on both sides, however, look upon the case as "epoch making." Lawyers everywhere seem to know that some eminent lawyers in Tennessee have debated the proposition of making gasoline a public utility, and they are eager for the court's opinion. Politicians are interested for other reasons. They want to see the powers of the state increased to enable them to meddle in any industry.

There are only two active opponents of the law: the Standard Oil Co., and The Texas Co. E. S. McDonald, attorney for National Refining Co., told the court his client was interested mainly because the law had no provision whereby a refiner that makes a quality product might sell it at a premium. P. S. McKay, attorney for Pan American Petroleum Co., declared that his client sold from tank wagons only and was interested chiefly with the Independent filling station owners. He asked that the price fixing feature of the law be killed but that the provision against rebating be maintained.

The smaller Tennessee jobbing companies are on the state's side of the argument. They want a law to keep the big competitors from "playing hob" with the little companies at will. They want to prevent the Standard, and other big companies from bringing about what they call a "squeeze play" like the market situation of 1925. Mr. Lynch, who represents the state in this case, represented the small jobbers in their suit against the large companies early last year.

To say it tritely, the small Independents want the big companies to post prices, but they want the big companies to observe the prices they post. They are willing to have Standard Oil be the leader of the market, but they want Standard representatives to sell at the prices they post or post the prices they sell at. Under such conditions they would rather have the Standard Oil Co. marking up prices than to have the state government doing it.

Al D. McKnight, who introduced the bill in the state senate, is frank to admit that he does not want the state to set the gasoline price. Other oil jobbers in Tennessee agree with him. They gave the bill their support because of the other provisions, not because of the price fixing clause which Gov. Peay demanded.

Distributes Hyvis in Northwest

TACOMA, WASH., May 9.—The Northwest Oil Co., which was incorporated the first of this year, is distributing in western Washington Hyvis motor oil of the Fred G. Clark Co., Cleveland, O. Headquarters and bulk stations are here, and an office and bulk station are located at Seattle.

C. A. Richards, who for the past five years was a member of Richards & Malin, service station operators of Tacoma, is president of the Northwest company.

Accident Curve Falls After Safety Work

CLEVELAND, May 10.—Consistent safety work in the petroleum industry has been followed by a pronounced downward trend in the accident curve, E. J. Senne, supervisor of safety, Vacuum Oil Co., told oil company safety men at a sectional meeting of the Eastern States Safety Conference recently in Newark, N. J. Mr. Senne for two years was chairman of the petroleum section of the National Safety Council.

Some records, Mr. Senne said, show a reduction of more than 75 per cent in the frequency rate of accidents in the last five years. Mr. Senne outlined the organization of the petroleum section and the aims of the regional divisions in promoting accident prevention work within their territories. Concerning the development of the safety idea, he said:

"Education is the prime factor in successful accomplishment of any safety program and the main elements in success of a safety program I believe to be, first, human understanding and, second, a fair knowledge of every operation involving labor and mechanics. We must follow education along school lines from a primary grade upwards to the point where a workman is schooled to the idea of thinking safety and working with that regard so necessary for his own good and for the best interest of his fellow-worker and of his employer.

"Such progress in education varies considerably. We find various degrees of intelligence among the workers. Some will learn readily every lesson taught; others must be led through the ABC class of safety; some will always remain in the ABC class, and others, strange to say, may even teach us. Patience, diligence, and earnest toil are the requisites of success in accident prevention work."

A. P. I. Standard Equipment Being Misused in Field

DALLAS, TEXAS, May 9

FIELD men are subjecting material made up on American Petroleum Institute specifications to usage it was not made to withstand and consequently breaks and fishing jobs are occurring that are unnecessary, J. Edgar Pew, Sun Oil Co., chairman of the general A. P. I. Standardization Committee, points out in announcing the coming semi-annual standardization Conference at Colorado Springs, June 15 to 17.

This experience is making necessary the education of field men in the use of standardized equipment, and the conference will consider means to carry out such work, with its present organization of committees of oil men and equipment men as a nucleus.

"Regardless of how good the material specified and furnished is, and regardless of how well this material meets the requirements of present-day drilling, it is possible to build up or strengthen the power applied and make any such material inadequate for the new demands that are put upon it." said Mr. Pew.

"This is especially true as applied to drill pipe for rotary drilling. I contend the weakest place in drilling equipment should be above the derrick floor. There is where trouble, if any, should occur. *Fishing jobs should be above the derrick floor, rather than in the hole. Regardless of how good drill pipe is made, it is always possible to build up the power applied sufficiently to break the drill pipe and cause a fishing job.* This is what is happening today. The new standard A. P. I. drill pipe has worked so satisfactorily that some users are now trying to exact a greater service than it is adapted for and the result is that breaks and fishing jobs are beginning to occur that should not occur.

"IN some cases, three boilers and two twin engines are used which in conjunction with a too rapid rotation of the rotary table can ruin any drill stem possible to make.

"The same is true on other equipment used for drilling such as rig irons, wire rope, derricks, etc., For example, in the Seminole field, over 300 wells have been drilled of which 37 were lost in the producing area. These lost wells were not dusters but failure to complete them was probably due to the rush to finish the wells and the ensuing greater strains that were imposed upon the materials.

"If such troubles as these are being encountered, they should be carefully looked into and the causes analyzed. If our Committees can help to solve these problems, they will always endeavor to do so; but do not make unreasonable demands on this admittedly better equipment and then blame your trouble either on the specification or the manufacturer."

The Colorado Springs Conference will be largely devoted to analyzing the extent to which material made on A. P. I. specifications is being used and the results obtained, Mr. Pew pointed out in his statement. Specifications are now complete on most of the items listed in the original Standardization Program, and the work now is largely to be devoted to the introduction and use of the standards in the field.

"Over 1700 of our handbooks have been distributed in every oil producing district of the United States and many foreign countries. Many manufacturers are now marketing standard A. P. I. equipment and have in many cases expended large sums of money in changing patterns, equipment, etc., to accomplish this purpose. It is now up to the oil producers to give active support to this program in a vigorous and methodical way," said Mr. Pew.

"This entire standardization program is essentially one of cooperation between the manufacturer and the purchaser. To extend this cooperation, we should have a wide circulation of our standards, especially among the field men both in the drilling and production divisions, field warehouse men, supply stores, etc.

"Introduction of A. P. I. standards into actual use need not be a wasteful process. The purchaser, and by purchaser we mean not only the actual buyer but the executives and field superintendents, who in many cases control the buying, should carefully analyze the specifications and adopt a definite program for the actual introduction of the A. P. I. standards to suit his individual requirements."

Ten Per Cent Gain in Gasoline Consumption in California

Staff Special

LOS ANGELES, May 7

JUDGING from the increase in number of gallons of gasoline upon which tax was paid in California during the first quarter of 1927, compared with the same quarter last year, showing an increase of about 10 per cent, it is indicated that taxes will be paid on a billion gallons of gasoline in 1927. The increase would only have to be slightly more than 10 per cent, and that is practically assured.

During the first quarter, this year, taxes were paid on 218,816,494 gallons in California against 199,495,068 gallons in same period in 1926 and 172,272,538 gallons in 1925. Due to increase of tax per gallon from 2 cents to 3 cents, not yet in effect, but which will be affecting last half of year, the state will collect about $25,000,000 for highway purposes. The bill raising the tax has been passed and is waiting the signature of the governor.

As in previous quarters, Standard of California leads in total amount of gasoline sold and tax paid. Shell Company is second with Richfield Oil Co. holding third place. Union is fourth and Associated is fifth. The standing of eight of the leading companies follows, giving total gallonage upon which tax was paid first quarter of 1927, compared with first quarter in 1926:

First Quarter

	1927	1926
Standard	52,870,892	49,698,538
Shell Co.	34,261,512	32,307,006
Richfield	31,609,026	27,794,703
Union Oil	26,369,781	22,728,280
Associated	22,164,684	20,487,387
California Pet.	12,876,180	* 2,384,069
Pan American	10,927,121	6,447,649
General Petroleum	7,724,687	7,371,049

*Took over Ventura Refining Co. after first quarter in 1926.

There was much rain in California during January and February, this year, making for bad roads reducing travel considerably.

Following is total tax paying gallonage in California by quarters for the years 1925 and 1926, with first quarter of 1927 for comparison purposes:

California Gallonage Paying Tax

In Gallons

	1925	1926	1927
1st quarter	172,272,538	199,495,068	218,816,493
2nd quarter	203,721,510	288,400,144	
3rd quarter	220,047,852	244,914,522	
4th quarter	216,059,862	233,078,420	
Totals	812,101,762	905,888,154	

Two Day Meeting for Virginia Jobbers

PETERSBURG, VA., May 9.—A two-day meeting of the Virginia Independent Oil Men's Association will be held at the Hotel Murphy at Richmond, Va., on June 13 and 14.

A good business meeting, speakers, a banquet and other entertainment are on the program, according to W. M. Eller, secretary.

It is believed that members and visitors will be given a sightseeing trip by the Richmond Chamber of Commerce.

Young Talks Standardization

DALLAS, May 9—Details of the work done by the American Petroleum Institute Standardization Committees were told members of the Wichita Falls Geological Society and field men who were their guests May 7 by C. A. Young, standardization director of the institute. Mr. Young said that the introduction into field use of equipment made to A. P. I. specifications was already giving that material a higher resale value than other equipment.

Says Oil and Gas Producers Should Co-Operate to Maintain Pressure

CINCINNATI, O., May 11

OIL and gas producers should work together in development of those fields in which both are interested to maintain the gas pressure in the sands so that both oil and gas will be produced in the most economical manner to the advantage alike to the oil producer, the gas producer and the public.

This message was given the convention of the Natural Gas Association of America here by N. C. McGowen, Louisiana Gas Co., Shreveport, La. Stating that to prevent waste of natural gas in horizons where oil occurs down the flanks of the structure is a difficult problem, because of what he called the inclination of the oil man to produce oil at the sacrifice of gas when both products could, in most cases be produced economically. Mr. McGowen went on to give a concrete illustration that came within his own knowledge as follows:

"During the latter part of 1922 a gas well was completed in the southwest, making 30,000,000 cubic feet of gas with 1080 pounds rock pressure. Several additional wells drilled in the territory indicated a field of approximately 10 square miles in area and having an estimated recoverable reserve of 100,000,000,000 cubic feet of gas.

"In 1923, after six wells had been completed, a line was laid into the field for the purpose of taking out the gas. This line was completed in the fall of 1923.

"At that time a well drilled for gas on the edge of the field was deepened and it showed a considerable amount of oil; in fact, after a test, the well actually produced 150 barrels of oil and 30,000,000 cubic feet of gas. This resulted in a number of wells being drilled for oil. By the summer of 1924 there was a well on practically every lease in the field, producing oil and gas. The gas was blowing into the air and the oil was saved. Within a year there were approximately 200 wells completed in the field. In the fall of 1924, one year after the pipe line facilities had been built, there was not enough pressure to feed gas into the line. The gas reserve, estimated at 100,000,000,000 cubic feet, had been dissipated with less than 1,000,000,000 cubic feet taken from the field through pipe lines, and, in the fall of 1924 the pipe line extension to the field was used to carry gas in from other fields for fuel for drilling operations. There was approximately $4,000,000 worth of gas in this field, based on 4 cents per 1000; there was less than $40,000 worth of gas in this field recovered and sold. Up to the present time there has been about 8,000,000 barrels of dollar oil produced.

"The conditions in this area were that gas was present on the high part of the structure. Oil was found in the same sand on the flanks. The oil wells came in making a small amount of gas. The wells high on the structure making gas only were blown wide open with the hope that they would blow into oil. This resulted in the gas being entirely wasted and the removal of pressure from the oil in less than one year.

"If the operators had cooperated with each other to the extent of proper well-spacing for both oil and gas wells and would have been willing to have pinched back the oil wells, allowing the gas wells to feed into the lines as the market would absorb it, the gas would have been recovered and sold, the pressure would have been maintained on the oil, resulting in a greater ultimate recovery of the oil with less lifting expense.

"I cite this one instance to show the necessity for the closest cooperation between the producers, so that when oil and gas are found in the same horizon some plan can be worked out to recover and market both."

Petroleum Motor Transport Increases Membership

TULSA, May 7

Organized early this year, the Petroleum Motor Transport Association of Oklahoma is gaining in membership, now including nearly all the larger companies who operate in Oklahoma.

Men who have charge of motor transportation for the member companies meet at dinner the second and fourth Friday of each month in the rooms of the Purchasing Agents' Association. General discussions are held on many phases of operating truck fleets and ideas on methods of handling this work exchanged.

The several purposes of the association are set out by R. F. Fike, manager of the motor transportation department, Mid-Continent Petroleum Corp., president, as follows:

1— To establish friendship and spirit of helpfulness between drivers.

2—To foster cooperation between transportation departments of the member companies.

3—To stimulate proper road etiquette.

4—To promote efficient methods of cost accounting.

5—To effect cooperative road repair work in isolated districts.

6—To promote standardization of bearings and other automotive parts.

Probably first results will be seen in the matter of cooperation between drivers because this is a thing which is being stressed most at this time. Within a short time every member company will be supplied with metal emblem plates, to be attached to the radiator of every car and truck. This emblem, drivers are being told, gives them the right to hail any other driver whose vehicle bears a similar emblem and ask for help when in trouble. Only in cases where non-stop orders have been given to drivers, as on a rush order to get material to a drilling well, will it be excusable for drivers to disregard this signal of distress.

ONE Company in Oklahoma says it spent $800 in March for towing. Had this system of helping each other been in effect then, probably this item of expense would have been much lower.

In the matter of road betterment, the attempt will be made to get into new fields in advance of the big movement of materials and do some actual planning to handle the heavy loads. Each of the member companies might assign two trucks to this work and the combined effort would save considerable money later in breakage and lost time.

Only oil companies are eligible to membership in the association. To date 25 have joined and almost daily there is an addition to the list. The full strength of the association finally will be around 100, it is believed.

Besides Mr. Fike the president, officers are: Robert Mayo, Gypsy Oil Co., first vice-president; Thomas Price, Roxana Petroleum Corp., second vice-president; Ernest L. Bell, Shaffer Oil & Refining Co., secretary-treasurer. Because of the absence of Mr. Bell from Tulsa, F. P. Nopper, of the Gypsy, has been acting secretary and treasurer.

The executive committee consists of the officers and the following: Cecil M. Nerber, Carter Oil Co.; John R. Hicks, Tidal Companies; Charles Earl, Prairie Oil & Gas Co. and Samuel C. Philips, Sinclair Oil & Gas Co.

Smallwood Hurt in Auto Crash

Staff Telegram

HOUSTON, May 9.—E. L. Smallwood of Carl H. Pforzheimer & Co., New York, is in serious condition in Baptist hospital in Houston and President J. E. Dunn of the Gibson Oil Corp. at Amerillo is recovering from injuries suffered in an automobile collision near Texas City, May 4. E. D. Hoover, Jr. and his sister, Miss Vashta Hoover of Canadian, Tex., and Miss Evelyn Henson of Drumright, Okla, also were injured, Miss Hoover seriously. A truck knocked the car in which they were riding off the road.

Shaffer's Executives Meet

CHICAGO, May 7.—Tulsa and Chicago executives of Shaffer Oil & Refining Co. held their regular monthly meeting in Chicago May 6. Officials attending were John L. Gray, vice-president and general manager; W. R. Francisco, secretary and treasurer; L. B. Riddle, in charge of production; W. E. Moody, manager of refineries; all from Tulsa, and B. L. Majewski, general sales manager, Chicago.

How One Pump Accomodation Business Became Active Super Station

By Roger B. Stafford
N. P. N. Staff Writer

LANCASTER, PA., May 5

EDWARD P. STUMPF of this thriving Pennsylvania city may know little about the Darwinian theory of evolution in animal life but Stumpf's Service Garage, a super service station, is visible evidence that he knows a great deal about the theories and practices of business evolution.

Ed Stumpf is a modernist in respect to business evolution. He began his business career as a plumber and undertook the sale of oil and gasoline less than 10 years ago as a convenience for the tenants of a row of garages he had built on a lot next his plumbing shop. He made money from the start and put in some accessories. He owned a lot across the street and built a repair garage with four-pump gasoline station in front. Last year he added a three-pit oiling and greasing house. This year he is set to install a car laundry but is undecided whether to do so.

Ed Stumpf knows how to get business and how to keep it. The growth of his enterprise, which has unfolded one leaf after another like the opening of a rosebud, attests to both these assertions. The location of his super station on the two sides of Fremont street about a mile from the business district of Lancaster in a neighborhood where traffic is usually light, seems really against rapid development of such a business in a city of approximately 60,000 population. But Stumpf draws trade from all over Lancaster and the nearby country.

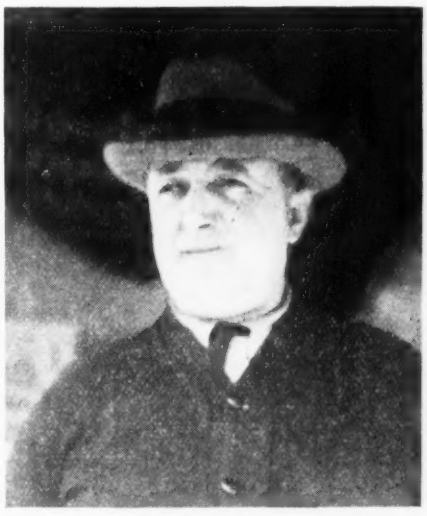
Cleanliness, courtesy, thoroughness and square dealing are the principles that govern the conduct of Stumpf's business. All his buildings and equipment are neat and clean. His employes are courteous. They do their work thoroughly to the satisfaction of the customer. Fair prices are charged and Stumpf is paid for some of the little things done about a service station that often are on the free list.

THE growth and success of the Stumpf enterprise may be attributed largely to astute personal supervision. This personal supervision is the great advantage a small business man has over the large corporation. Stumpf has used his advantage to the greatest extent. He lives in a pretty white bungalow next door to his accessory store. He spends his days looking after his established trade and getting new business, and his evenings in his office in the store. His friends usually are entertained in the office where he has radio and benches.

Mr. Stumpf's first step away from his plumbing business was the building of a row of 12 one-car garages. These paid a profit and he added another row of 12. Later he used spare space for an additional dozen. These rent for $6 apiece a month. They serve the car owners of a neighborhood that is closely built on rather narrow lots, on which it really is inconvenient to get into or out of a private garage.

Two rows of garages which inspired the building of Stumpf's super station. At right is office and accessory store. At curb is site of pump where Stumpf began his oil and gasoline enterprise less than 10 years ago

These cars needed gasoline so he put in a curb tank and pump with a small supply of motor oil. Another curb pump soon was added and the business continued to grow. He built a small accessory store in front of his plumbing shop and a small garage nearby.



EDWARD P. STUMPF
Owner of Stumpf's service garage

Five years ago he built a model garage across the street with a drive-in service station as an integral part. There are four pumps in this station.

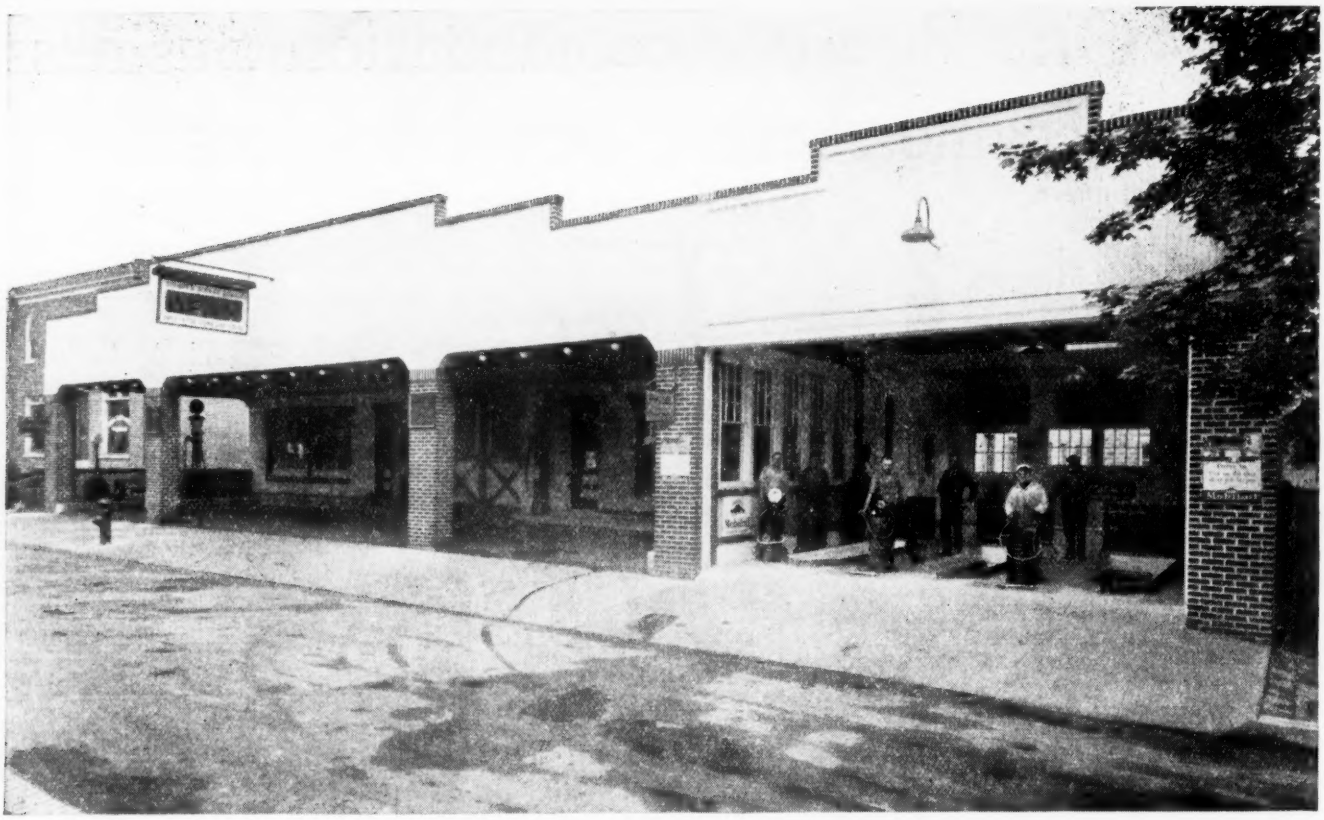
There were large windows in two storerooms that face the drive of the station. He uses these windows for displays of motor oils of which he handles three nationally advertised brands—Mobiloil, Veedol and Pennzoil. In one room he has his packaged oils and self-measuring pumps from which he fills his oil bottles. The oil storage room is in the rear of this room. Canned oils and filled bottles are kept on steel shelves and make a wonderful display of orderliness.

THE second room is used for batteries. He sells a widely known battery and does a large recharging and battery rental business also.

The entrance to the repair garage is between the two storerooms. He has a towing service and his repair business is sufficient to keep half a dozen men employed.

The oiling and greasing house adjoins the service station on the right (facing it from the street). This building can house six cars but only three pits have been installed in the front half, under which is a cellar for the attendants and the oil storage tanks. The rear half has not been excavated.

The tops of the three drain pits are encased with steel. The runways are of heavy planks. The waste oil is drained into a tray that is hung on trolleys on the sides of the girders that sup-



Stumpf's Service Garage, Lancaster, Pa., a super station where every need of the motorist is supplied. Doors in center of driveway lead to repair garage. Display room for packaged and bottled oils is at left and battery room at right of repair garage doors. Drain pits are easily accessible from the street

port the pit tops. The trays are emptied into drums set under the street end of each pit. When the drums are filled they are hoisted from the pit with a block.

There are grease pumps and high pressure lubricators in the pits and on the ground floor. Bulk oil for the crankcases is stored in eight tanks in the pit and dispensed on the ground floor through a fountain with eight outlets. Each pit is also equipped with an air line for cleaning.

A CARD index record is made of each oiling and greasing job. A white card about 3½ by 5½ inches is filled out from a paper slip the drain pit attendant makes out in duplicate. This card has space for the name, address, make of car, license number, date, speedometer reading and name of attendant at the top. Below is space for the various services: crankcase, transmission, differential, universal joints, spring spraying and general greasing with several blanks; for the amount of materials used and the footing up of the bill. In the upper right hand of each card is column of the figures 1, 2, 3, and 4, with space to the right of the figures for the insertion of dates. These figures are a part of the follow-up system. When the day's drain pit slips are turned in Mr. Stumpf, who does his own bookkeeping at night, fills in a blue card 3¾ by 6¾ inches and mails one to each of that day's customers. The text of the card follows:

"Yesterday We Lubricated Your Car.

"We wish to thank you for this business and at the same time urge you to have your car serviced regularly.

"The oil in your crankcase should be changed every 500 miles. Other points—transmission, differential, grease points—require service also at regular intervals.

"Bring in your car when your speedometer registers ..... miles. Let us renew your crankcase oil and at the same time examine all other points on your car requiring lubrication.

"It is safer to have us give you this regular examination than to take a chance and lubricate when you think the car needs it. The examination costs nothing."

At the bottom is the trade mark of a prominent brand of oil Mr. Stumpf handles, the name of his place, the address and telephone number, and a request to bring the card in when another oiling and greasing is necessary.

IF the car owner has not come into the station for more service in 10 days a yellow card is mailed him. The text of this card is:

"Ten Days Ago We Lubricated Your Car.

"Your speedometer then registered ..... miles. When it gets around to ....., it would be wise to have the oil in your crankcase drained off and fresh oil of the correct grade put in.

"At the same time, we offer you the free service of examining other parts of your car, such as transmission, differential, grease points, to see whether they are amply protected with lubricants.

"Motorists who have their cars serviced regularly get better satisfaction and longer life from their machines."

At the end of two weeks from the date of oiling, a green card is mailed the customer if he has not shown up for service. It is worded thus:

"TWO Weeks Ago Your Car was Here for Lubrication Service.

"Check up your mileage now, and if it registers ....., bring your car in for crankcase service. It is more economical to have your oil drained and fresh oil of the correct grade put in than to keep adding good oil to the old worn oil in your crankcase. Many motorists change oil every 500 miles, using Gargoyle Mobiloil and never add a drop between drainings.

"Transmission and differential service and greasing of the chassis should be done on regular schedule also. We have the equipment to do this work most effectively. We use only the highest grade products."

A fourth reminder, a red card, is sent out the third week. It follows:

"Three Weeks Ago We Serviced Your Car.

"Time to bring your car in for crankcase service and examination of your transmission, differential and greasing points on your chassis.

"We use only the best of lubricants.

"We have the latest equipment for giving lubrication service.

"Our prices are as low as any in town.

"If your speedometer registers ..... miles, take the safe course and bring your car in today."

Mr. Stumpf said this follow-up system has been adopted by the manufacturer of a national brand of motor oil as part of its dealer service. He said he had found the system effective in getting repeat business and the cost was only about 10 cents a customer when all four cards were sent. The largest item is postage, 8 cents.

FRAMED and conspicuously hung in the oil house is this declaration:

"Our Business Policy.

"We want it known that substitution is not tolerated in our establishment. Our customers know this. If a motorist asks for any trade marked oil or other article, he gets the genuine or a frank statement as to what product we offer him.

"For Honesty in Business.

"Edward P. Stumpf."

The oiling and greasing house is virtually spotless. No dirt is allowed to accumulate. The concrete floor is scrubbed and the walls are painted white. There are two large skylights and at night four floodlights provide plenty of illumination. The pits are equipped with stationary and portable lights.

Each of the three pits is fully equipped with stationary and portable lights.

Each of the three pits is fully equipped to do a complete lubrication job. There is no waiting at one pit while a piece of needed equipment is in use at another.

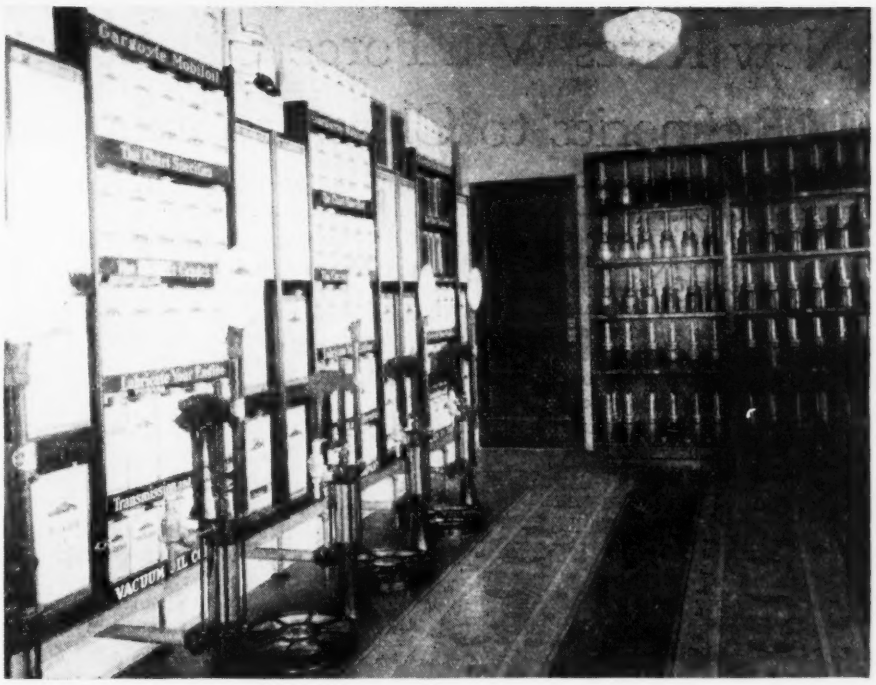
Four men are employed regularly at the service station and drain pits. Two work morning and afternoon and two afternoons and night. In an emergency men may be drawn from the repair garage, which adjoins the drain house at the rear, to help in the oiling and greasing.

The pits have increased the sale of motor oils more than three times in the last year, Mr. Stumpf's records show, although gasoline trade has only doubled. His monthly motor oil sales run into four figures.

Mr. Stumpf sells tires, in fact everything a motorist may need.

"The motorist doesn't want to go shopping around a half dozen places to have his wants taken care of. I have built this place with the idea of giving him everything he wants just as fast as we can and of a quality and price that is satisfactory to him. We want to bring him back when he wants something else," he said.

The motorist wants to do business at a clean place, Mr. Stumpf explains in telling why one of his own men keeps the street clean in the block on which the Stumpf buildings front. Like other cities Lancaster does not provide for the daily sweeping of streets remote from the business district but Mr. Stumpf has overcome that deficiency.



Packaged oil room at Stumpf's super service station, Lancaster, Pa. Pumps are used for filling bottles which are stored in steel shelves. Display racks with carriers and bottles are outside the door at end, handy to the drive

The accessories are kept on neatly arranged shelves or in tills in the building across the street from the main service station. One of the two display windows in this building is used for accessories, tires or parts and the other for accessories and batteries.

The accessory business is not so good since two cut price houses opened in Lancaster, Mr. Stumpf said, but he continues to carry a large sized line of parts.

HE maintains an authorized headlight testing station for the state. Adjusting headlights is a service given free by many oil companies in states where headlight adjustments are closely watched. But the charge is 50 cents an adjustment at the Stumpf station, and those who call for adjustment usually buy something else while there.

Mr. Stumpf is Lancaster dealer for a widely known brake lining. He expects a brake testing station may be established at his station shortly. This will bring more motorists to it besides giving him a small fee for each testing job.

Candies, chewing gum, cigars and tobacco are handled at the accessory store but for convenience of patrons rather than the small profit derived from them, Mr. Stumpf said. The neighbors as well as car owners patronize this part of the business.

Mr. Stumpf has no bulk storage for gasoline. He buys Tydol gasoline from the local distributor. His gallonage through six pumps was 4000 gallons in the poorest week this year, his records show, and in the middle of April was exceeding 9000 gallons a week. He has just bought a high speed pump with which he expects to accelerate part of his gasoline sales this year.

He keeps records of each division of his business but he uses only the most simple system. His chief original record is the tape of a cash register which shows the nature as well as the amount of each sale or transaction. A card system is used for all his other acounts.

Besides his direct mail advertising he uses regularly one or two pages a month in the Lancaster Motorist, the publication of the Lancaster Automobile Club. He also has 10 40-foot road signs and 20 smaller ones in conspicuous positions. Occasionally he uses newspaper space.

Survey Second Line to Yates Ranch

HOUSTON, May 9—Transcontinental Oil Co. of Tulsa, which operates a refinery at Fort Worth, is making a survey for a 27-mile pipe line from Yates Ranch pool in Pecos county, to the Orient Railroad at the oil town of Texon in Reagon county. The proposed 8-inch carrier would handle crude produced for Transcontinental under its partnership with Mid Kansas Oil & Gas Co. in the Yates pool. Mid Kansas already has an 8-inch line from the field to McCamey, where it contracted deliveries of 10,000 barrels daily to Humble Oil & Refining Co. Transcontinental's system will be built by its allied interest known as United Producers Pipeline Co.

Oil Secretary Killed

HOUSTON, May 9—William McGinn, former Cincinnati newspaper man and secretary of New Mexico Oil Men's Association at Artesia, was killed May 5 in an automobile wreck on the Carlsbad Road. Sterling Beardsley, New York broker, was slightly injured.

New Rates Will Force Oklahoma Refineries to Close, is Claim

By Special Correspondent

WASHINGTON May 9.—Destruction of the petroleum refining industry in Oklahoma, through bankruptcy and removal of plants by companies able to bear that expense, and havoc to the cities and towns of that state are asserted in a grave document filed by the Corporation Commission of that state with the Interstate Commerce Commission this week. The document is a petition to the federal body for rehearing and further investigation of the formal complaints filed by the Sinclair Refining Co. and others, collectively known as the Mid-Continent Oil Rates Case, 1925.

Orders in that case, putting a differential of $12.50 per car against refiners in Group 3, in comparison with refiners in Kansas, are to become effective June 20, the commission on May 5 authorizing postponement to that day from May 20.

Allegations by losers in freight rate fights before the federal regulating body that the rates ordered will "put them out of business" are common. But the Oklahoma Corporation Commission's petition is widely out of the ordinary because it tells what named refiners have planned to do to save themselves from the effects of the orders in this case.

"The Mid-Continent Petroleum Corp., formerly Cosden & Co., operating the largest petroleum refinery in the Mid-Continent field away from tidewater, is contemplating, we are advised, if the orders eventually become effective and remain in effect, piping its crude petroleum to the source of consumption and there re-locating its refinery," says the Oklahoma state body. "Its immense plant, with millions of dollars of investment, at Tulsa, will eventually become obsolete and therefore another economic waste.

"THIS happening would be disastrous not only to the state of Oklahoma, but to the state of Kansas as well, because it would spell the eventual closing out of the inland refinery business in the Mid-Continent. What may happen to the Mid-Continent Petroleum Co.'s refinery at Tulsa may and probably will eventually happen to the other Mid-Continent refineries, except such as may be kept in operation for purely local consumption and for the making of natural gasoline, a by-product of natural gas.

"We do not mean to say that the closing down of the refineries in Oklahoma will be immediate with the effectiveness of the commission's orders, but we are advised that the result is inevitable. We cite as evidence thereof the preparation which refineries are now making to build pipe lines in which to run their crude to new locations, for refineries, outside the Mid-Continent field, if these orders become effective, and the refiners can command the capital to make the necessarily contemplated pipe line investment."

The Oklahoma commission said that the Marland and Empire Refineries at Ponca City, Okla., were only about 24 miles from points in Kansas and that in order to avoid the handicap of $12.50 per car they could build pipe lines into Kansas and avoid that imposition. It said it was advised that if the orders became effective, Marland and the Empire Refineries would build pipe lines into Kansas and establish loading racks in that state. It said that one of those two companies was contemplating the construction of a private electric railroad so as to get its products out of Oklahoma and get the benefit of the $12.50 per car lower rate from Kansas that will prevail if the orders go into effect.

"No additional revenue could accrue to the steam rail lines" said the Oklahoma commission, "but the orders would cause this unnecessary expense in the building of a pipe line or electric railroad." The Oklahoma body called attention to the fact that refined products can be and are moved through pipe lines.

A charge, seriously reflecting upon the integrity of proceedings before the federal rate body if well founded is made in the following language: "The orders herein were influenced by matters outside the record and covered by conference on points east of the Mississippi River, at which conference representatives of the Mid-Continent field were not in attendance."

The Oklahoma commission asserts that it has been appealed to in this matter by the refiners, Oklahoma chambers of commerce and by the railroads for help in obtaining further consideration of the orders in these cases.

Promotion of Safety is Object Of Club at Hominy, Okla.

By Ray E. Miller

Manager, Safety Dept., Marland Companies

A NEW departure in organized accident prevention work in the petroleum industry was undertaken at Hominy, Okla., some three months ago by the formation of the Hominy Safety Club, and subsequent meetings indicate that the organization can and will perform a real safety service in southeastern Osage county.

Last summer while the writer (then safety director of the Petroleum Safety Council of the Mid-Continent Oil and Gas Association) was holding a series of foreman's safety meetings throughout the Mid-Continent fields, the question of community safety organizations through which operating companies could exchange ideas and experience on safety and operating problems was often discussed. Superintendents and foremen in the producing and pipe line divisions of many fields seemed to feel the need of such a forum but it remained for the men around Hominy to take the initiative and give the idea a thorough trial.

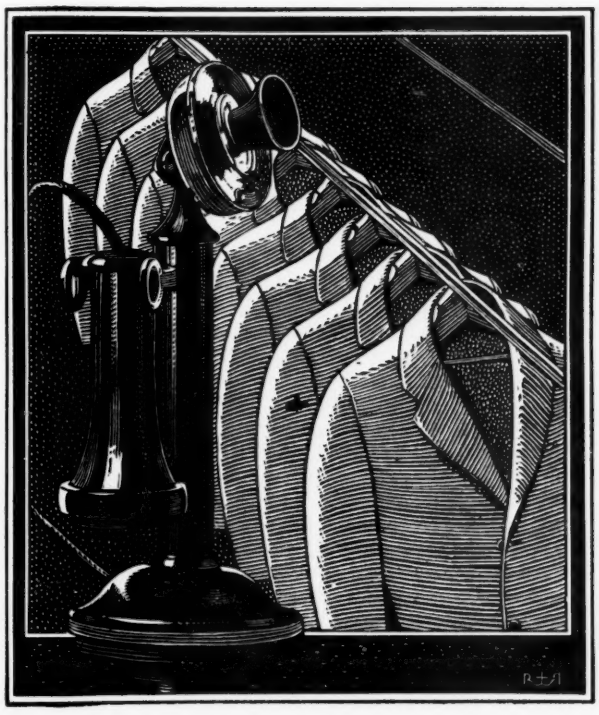
After some months of discussion and correspondence an invitation was extended to all companies operating in that district to attend the regular monthly Marland employe safety meeting on Jan. 26, 1927. Some 50 men from 10 or 12 different companies attended and voted unanimously to perfect an organization. C. P. Houston, Atlantic Oil Producing Co., and W. J. Novack, Continental Oil Co., who were leaders in arousing interest in the idea were immediately elected president and vice-president, respectively, and J. L. Steible of the Marland Oil Co., was made secretary and treasurer. It was further agreed that regular meetings should be held each month on the last Tuesday of the month, and several organization committees were appointed to report back with constitution, by-laws, etc., at the next regular meeting Feb. 22, 1927.

At the second meeting the officers were made permanent and the following board of directors elected: Thomas Kinney, Sinclair Pipe Line Co., R. R. McAlister, Cosden Pipe Line Co., G. W. Sliger, Gypsy Oil Co., O. A. Quarnstrom, Marland Oil Co., Samuel Peters, McCullough Oil Co., F. R. McDougal, Tidal Oil Co., W. H. Wilson, Indian Territory Illuminating Oil Co., E. R. McIntyre, Twin State Oil Co., and R. D. Schaffner, Valley Osage Oil Co. Constitution and by-laws were adopted, dues fixed and standing committees appointed. The purpose of the club was declared to be the promotion of public and home safety and the prevention of occupational accidents.

IN addition to general round table discussion of these purposes at each meeting, the club hopes to have one or two speakers enlisted from the executive ranks and safety departments of the various member companies.

These men have declared it is their belief that accidents can be prevented by safe practices, good housekeeping and interest in the job; and that a quickening of interest and enthusiasm engendered by inter-company group meetings will be reflected by a lessening of accidents and property destruction. They realize their opportunities and obligations for safety education among employes both new and old and are determined to meet the issue squarely.

Why not call them up *Long Distance* order more



A MADISON, WISCONSIN, clothier found that he was having a run on a special suit of collegiate type. He called the Chicago manufacturer on Thursday morning. Eight suits arrived on Friday. The entire lot was disposed of Saturday. "Had it not been for the telephone," he writes, "we would not have been able to satisfy the demand for a week-end business so profitable to us."

FROM ALL PARTS of the country comes similar news. From Wheeling, West Virginia: "A tremendous demand for slickers caused us to save many sales that would have been lost, had we not used the long distance telephone to secure immediate shipments." Louisville, Kentucky: "We use Long Distance for making purchases ... for hurrying along information and shipments. . . . In many cases it has saved us trips to market." Rochelle, Illinois: ". . . not a week goes by but we use Long Distance to take care of rush orders. . . . The only satisfactory way." Cincinnati: "Long Distance in our case is just as important as the local telephone."

There's scarcely a business in this country that could not use long distance calls to cut costs, save trips and get needed goods. They'll nearly always cost less than you think. . . . *Number, please?*

BELL LONG DISTANCE SERVICE

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

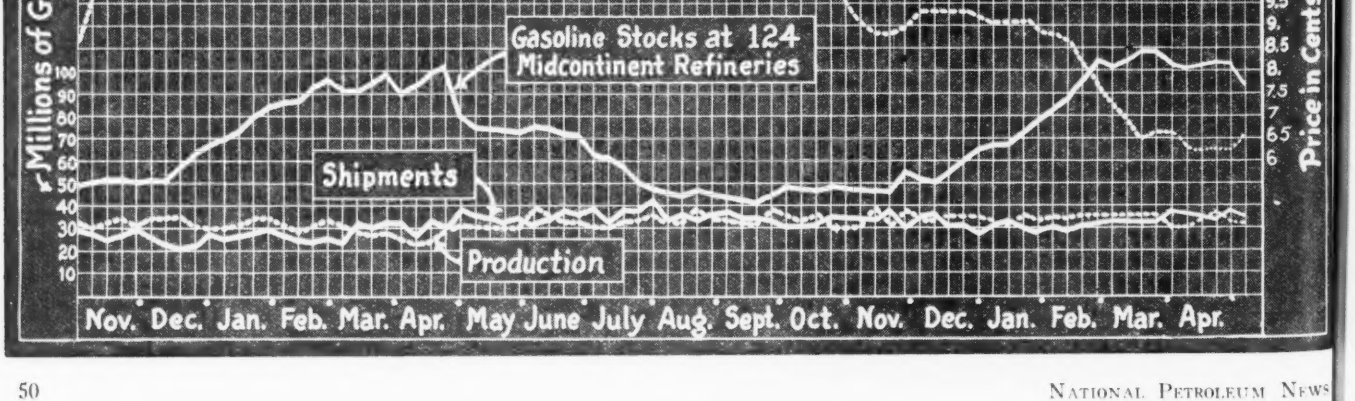
Mid-Continent Refinery Operations Week Ended May 6 (By Telegraph)

	Kansas	Oklahoma	North and Cent. Texas	North La.-Ark.	Total Week Ended May 6	Total Week Ended Apr. 8
Plants Reporting	23	46	41	14	124	124
Crude Cap. (Bbls.)	98,200	165,900	144,300	53,700	462,100	462,100
Cracking Capacity	21,000	45,800	15,750	20,200	102,750	102,750
Da. Av. Crude Runs	56,153 — 4.3	104,448 — 4.4	68,061 — 2.9	48,799 — 4.8	277,461 — 4.1	278,901
Da Av. Other Oils	5,363 +11.8	6,057	3,343 +68.8	1,990 + 7.3	16,752 +111.4	10,308
GASOLINE—Gallons						
Stocks April 29	14,138,000	61,962,000	19,614,000	5,596,000	101,310,000	102,750,865
Prod. 4-29 to 5-6	8,110,000 — 1.5	14,743,000 — 2.8	6,959,000 — 7.3	3,301,000 — 5.1	33,113,000 — 3.7	32,938,504
Ship. 4-29 to 5-6	7,910,000 + 9.4	17,191,000 — 3.3	7,007,000 — 6.4	3,344,000 —12.1	35,452,000 — 2.3	35,409,211
Stocks May 6	14,338,000 + 1.4	59,514,000 — 4.0	19,566,000 — 0.2	5,553,000 — 9.8	98,971,000 — 2.3	100,280,158
Ratio Sales to Prod	97.5%	116.6%	100.7%	101.3%	107.1%	107.5%
KEROSENE—Gallons						
Stocks April 29	3,387,000	7,554,000	2,313,000	1,295,000	14,549,000	15,326,003
Prod. 4-29 to 5-6	1,309,000 —14.2	3,141,000 +21.7	1,412,000 + 1.9	471,000 — 8.5	6,333,000 + 5.4	5,929,274
Ship. 4-29 to 5-6	2,320,000 +36.0	3,340,000 +28.6	1,406,000 + 1.7	357,000 —37.9	7,423,000 + 18.7	6,588,463
Stocks May 6	2,376,000 —29.8	7,355,000 — 2.6	2,319,000 + 9.3	1,409,000 + 8.8	13,459,000 — 7.5	14,666,814
Ratio Sales to Prod	117.2%	106.3%	99.6%	75.8%	117.2%	111.1%
STOVE DISTILLATE—Gallons						
Stocks April 29	2,299,000	2,824,000	879,000	157,000	6,159,000	7,250,746
Prod. 4-29 to 5-6	216,000 —24.5	296,000 +13.0	196,000 + 7.1	45,000 —28.6	753,000 — 5.2	1,137,370
Ship. 4-29 to 5-6	208,000 +69.1	418,000 —37.9	203,000 —2.05	124,000 +96.8	953,000 — 14.6	1,699,660
Stocks May 6	2,307,000 + 0.3	2,702,000 — 4.3	872,000 — 9.8	78,000 —50.3	5,959,000 — 3.2	6,688,456
Ratio Sales to Prod	96.3%	141.2%	103.6%	275.6%	126.6%	149.4%
GAS OIL—Gallons						
Stocks April 29	5,126,000	41,495,000	11,120,000	8,322,000	66,063,000	62,265,884
Prod. 4-29 to 5-6	1,696,000 +12.9	4,784,000 +77.2	1,549,000 +38.1	1,729,000 — 9.3	9,758,000 + 34.9	8,421,509
Ship. 4-29 to 5-6	1,507,000 —28.9	5,650,000 +97.1	2,521,000 +20.3	2,076,000 +33.7	11,754,000 + 36.1	7,009,098
Stocks May 6	5,315,000 + 3.7	40,629,000 — 2.1	10,148,000 — 8.7	7,975,000 — 4.2	64,067,000 — 3.9	63,678,295
Ratio Sales to Prod	98.9%	118.1%	162.8%	120.1%	120.5%	83.2%
FUEL OIL—Gallons						
Stocks April 29	13,452,000	38,531,000	23,260,000	7,410,000	82,653,000	79,412,508
Prod. 4-29 to 5-6	6,065,000 — 8.0	6,776,000 —14.4	9,810,000 — 9.7	6,759,000 — 4.5	29,410,000 — 6.5	28,730,933
Ship. 4-29 to 5-6	5,913,000 +10.5	8,107,000 — 1.5	9,030,000 — 5.4	6,338,000 —12.4	29,388,000 — 3.2	24,050,028
Stocks May 6	13,604,000 + 1.1	37,200,000 — 3.5	24,040,000 + 3.4	7,831,000 + 5.7	82,675,000 + 9.03	84,093,410
Ratio Sales to Prod	97.5%	119.6%	92.0%	93.8%	99.9%	83.7%

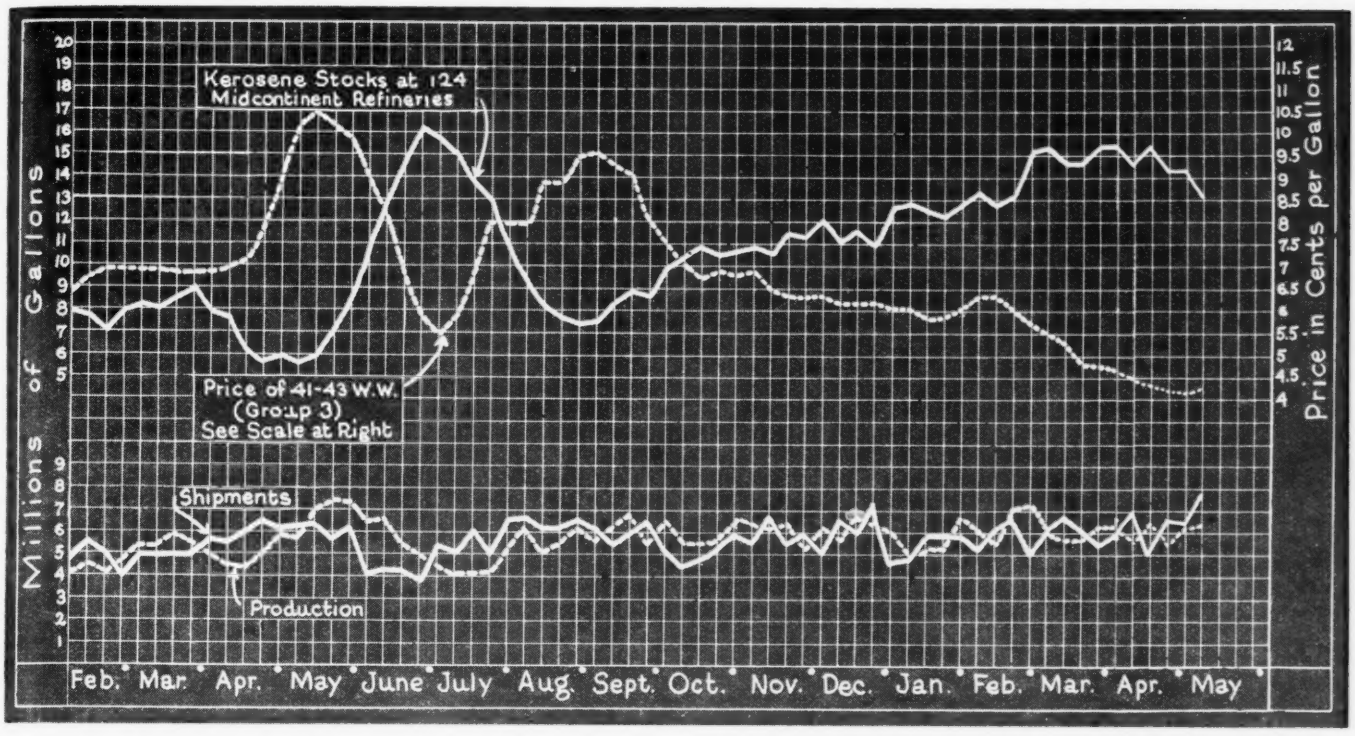
Gasoline Produced by Various Methods, Week Ended May 6

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,290,000	65.2	11,392,000	77.3	6,024,000	86.6	1,456,000	44.1	24,162,000	73.9
Cracked	2,205,000	27.2	2,359,000	16.0	740,000	10.6	1,520,000	46.9	6,824,000	20.6
Natural	615,000	7.6	992,000	6.7	195,000	2.8	325,000	9.9	2,127,000	6.4
Total	8,110,000		14,743,000		6,959,000		3,301,000		33,113,000	

+ or — columns are % change over previous week.


Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3 (SEE SCALE AT RIGHT)
Gasoline Stocks at 124 Midcontinent Refineries
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr.

Barometer of Mid-Continent Refinery Market—Week Ending May 6


Kerosene Stocks at 124 Midcontinent Refineries
Price of 41-43 W.W. (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News

Mid-Continent Refiners Again Reduce Crude Runs

Staff Special—By Telegraph

TULSA, May 10.

WITH Oklahoma refiners again setting the pace crude runs at 124 Mid-Continent refineries were reduced approximately 11,500 barrels daily average in the week ended May 6, according to their operations reports to NATIONAL PETROLEUM NEWS. The reductions were in all fields, Kansas showing a reduction of 2500 barrels, Oklahoma 4800 barrels, Texas 2000 barrels and the Louisiana Arkansas group 2200 barrels, making the total daily average 272,461 barrels, compared with 284,013 barrels the previous week.

Charges of other oils to stills were increased 111.4 per cent over charges in the week ended April 29 to 16,752 barrels daily average compared with 7924 barrels average in the preceding week.

Reduction in crude charges caused a reduction in gasoline production for the week of approximately 1,100,000 gallons to 33,113,000 gallons. Shipments of gasoline for the week were off approximately 800,000 gallons compared with the last week in April but were sufficient to pull stocks down 2,338,000 gallons to 98,971,000 gallons, the first time total stocks at these refineries have been under the 100,000,000 gallon mark since the last week in February.

Kansas refiners were the only group that failed to draw from stocks. Their total production was off 120,000 gallons while shipments were larger than in the previous week by approximately 600,000 gallons, causing an addition to stocks of only 200,000 gallons.

Kansas refiners reduced their production of kerosene for the week 200,000 gallons to 1,309,000 gallons. Their shipments increased more than 500,000 gallons, reducing stocks approximately 1,000,000 gallons. In the Arkansas-Louisiana group production was off 40,000 gallons while shipments fell 210,000 gallons to 357,000 gallons. Oklahoma and Texas refiners increased kerosene production somewhat but also increased shipments sufficiently to reduce stocks. Stocks May 6 totaled 13,459,000 gallons, compared with 14,549,000 gallons April 29.

Kansas and the Louisiana Arkansas group reduced production and increased shipments of stove distillate while Oklahoma and Texas refiners increased production; their shipments fell off. Oklahoma shipments were 418,000 gallons, a loss of almost a third when compared with shipments for the last week in April. With the exception of Kansas, however, each district reduced stocks. Stocks May 6 were 5,959,000 gallons, compared with 6,159,000 gallons April 29.

The ratio of cracked gasoline producted to straight run gasoline remained unchanged while gas oil stocks nevertheless were reduced of approximately 2,000,000 gallons. Oklahoma refiners almost doubled both their production and shipments. Arkansas-Louisiana refiners reduced their production but increased shipments. Stocks of gas oil May 6 totaled 64,067,000 gallons.

Fuel oil production in Oklahoma was curtailed approximately 1,000,000 gallons to 6,776,000 gallons, shipments decreased only slightly, totaling 29,388,000 gallons for the entire field. Stocks rose 23,000 gallons.

Summary for the Month

Production and shipments, all reporting refineries for four weeks ended May 6. Change in stocks figured from April 8.

Gasoline	Gasoline
Production	136,842,000
Shipments	138,151,000
Net change in stocks	—1,309,000
Ratio sales to production	101.9%

Kerosene	
Production	24,432,000
Shipments	25,640,000
Net change in stocks	—1,208,000
Ratio sales to production	104.9%

Stove Distillate	
Production	4,023,000
Shipments	4,752,000

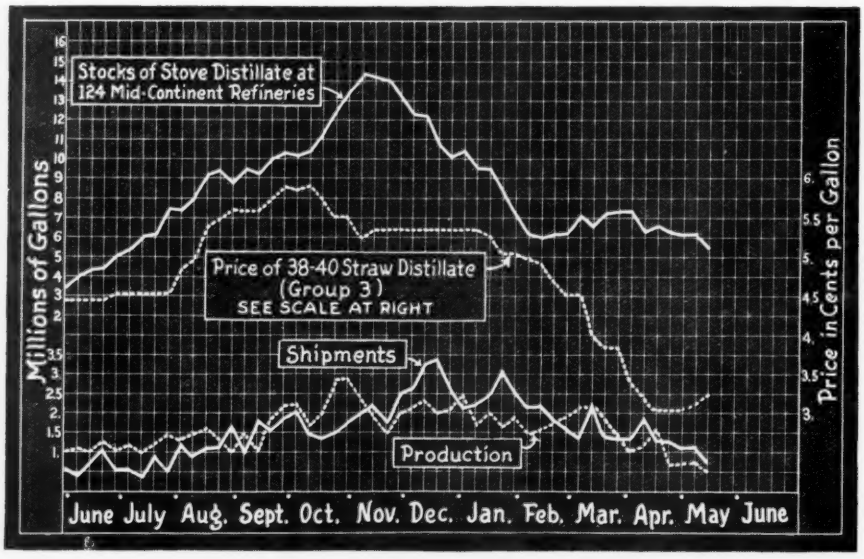
Gasoline	
Net change in stocks	—729,000
Ratio sales to production	118.1%

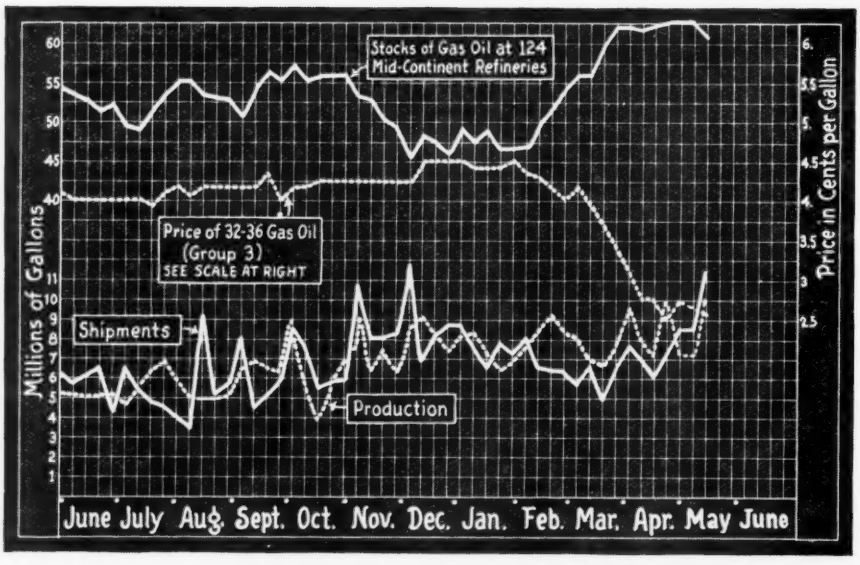
Gas Oil	
Production	34,379,000
Shipments	33,990,000
Net change in stocks	+389,000
Ratio sales to production	98.9%

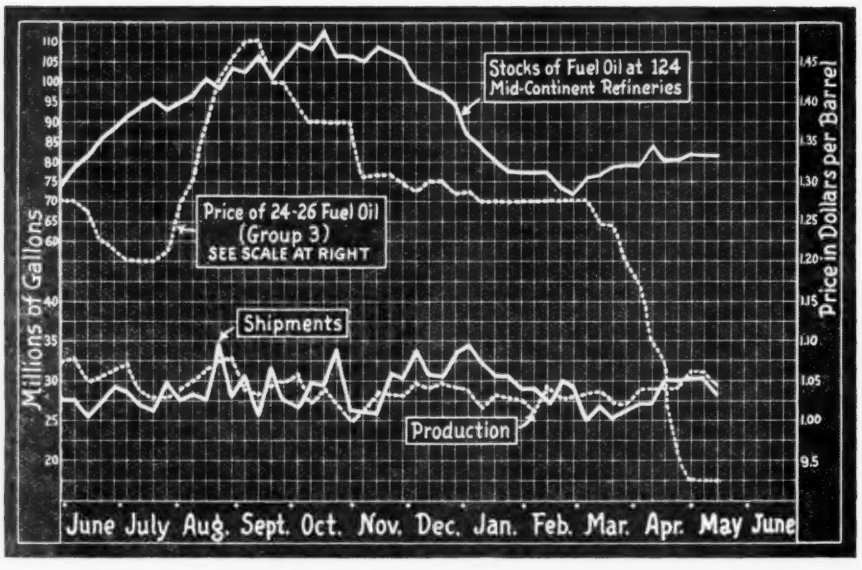
Fuel Oil	
Production	120,879,000
Shipments	112,297,000
Net change in stocks	—1,418,000
Ratio sales to production	101.2%

Barometer of the Mid-Continent Refinery Market

Week Ending May 6


Stocks of Stove Distillate at 124 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June


Stocks of Gas Oil at 124 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June


Stocks of Fuel Oil at 124 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Dollars per Barrel
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June

Auto Sales Fail to Show Usual April Gain

NEW YORK, May 6. — Automotive Industries this week said:

Preliminary reports from scattered sections on the volume of April motor car sales do not indicate that there was a decided gain over March, as is normally recorded. But although the usual seasonal upswing may not have taken place, this development is viewed in the industry in the light of the very large volume of business done in March by a majority of the companies. Good spring selling weather came earlier this year in many important sections of the country and it was natural to suppose that the market may have been anticipated to some degree.

Production is being held at approximately the levels prevailing in the latter half of April. A few manufacturers are getting under way on new lines and will probably register slight gains.

Check Payments Point to Trade Shrinkage

WASHINGTON, May 7. — Measured by check payments, dollar volume of business in week ended April 30, although lower than in the previous week, was substantially larger than a year earlier, according to the Department of Commerce. Wholesale prices showed practically no change from the previous week but were substantially lower than in the corresponding week of the preceding year. Loans and discounts of Federal Reserve member banks expanded slightly, being well above the corresponding week of 1926.

Interest rates on time money, although higher than a year ago, averaged lower than in the previous week. Bond prices averaged lower than in the previous week but were higher than in the corresponding week of last year. Prices of stocks listed on the New York Stock Exchange, although higher than last year, averaged lower than in the previous week.

New building contracts awarded during the last week in April, totaling $160,000,000 for 37 states, were larger than in either the previous week or the corresponding week of 1926. Business failures, although less numerous than last year, were greater than in the previous week.

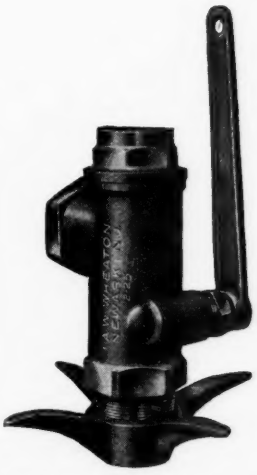
Shaffer Oil Has New Offices

CHICAGO, May 6. — Chicago offices of Shaffer Oil & Refining Co. have been moved from 1018 S. Wabash Ave. to the new 300 W. Adams St. building, one block west of the loop.

All departments are together now, and occupy approximately 10,000 square feet of floor space. There are about 300 employes. Private office walls are finished in yellow with walnut woodwork. B. L. Majewski, general sales manager, has a spacious corner office furnished in walnut.

The equipment shown here includes
Type 25 Loading Valves
Double Swing Joints
Type A Tank Truck Faucets

This Slow-closing, Self-closing Valve *Prevents Leaks and Overflows*



Type 25 Loading Valve

This is a right-angle valve, especially adapted for installation at the effluent end of the line. Sizes: 2, 2½ and 3-inch. Type 26 is similar to Type 25 except that it is a straight valve for mid-line location.

WHEN a loading valve closes with a jar, it may cause *leaks.* And, if a loading valve is carelessly left open, not only does overflow result but serious damage may follow.

The Wheaton Type 25 Loading Valve *prevents* leaks and overflows; it is *slow-closing* and *self-closing.* It may not prevent carelessness, but it does protect you *against carelessness.*

Type 25 is *counterbalanced*—which makes the closing action of the valve *slow, smooth* and *easy.* This prevents leaks which would result if the valve shut with a jar. Moreover, with Type 25, the valve has to be *held* open—the instant the handle is released the valve *closes tight.*

Type 25 lives up to the Wheaton reputation of *unmatched quality.* It is made of a special-analysis brass alloy—tempered and toughened to assure long life despite hard wear. It is equipped with a sturdy brass alloy spider which prevents it from slipping into the tank and catching; this removes the danger of jerking joints loose should the truck move.

We will gladly send you a sample of Type 25 Loading Valve. If it does not prove satisfactory you may return it for full credit or refund.

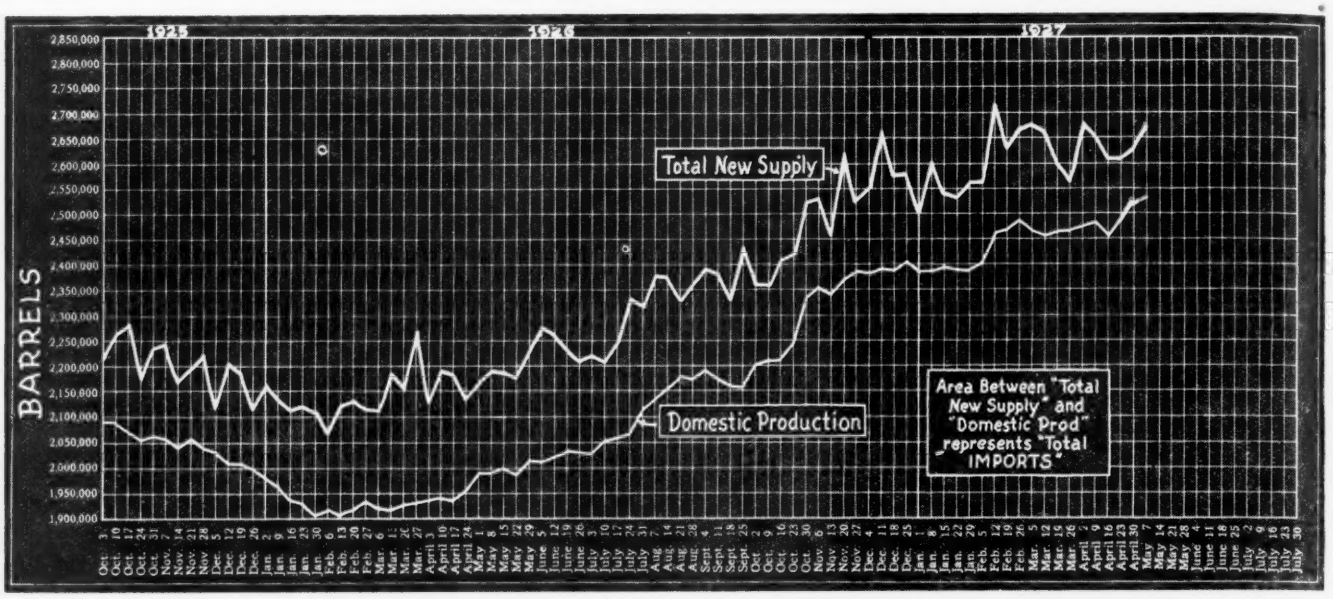
Write for the illustrated Wheaton Catalog containing full information about all the Wheaton Products.

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below, as compiled by American Petroleum Institute

Production Summary

	May 7	April 30
Production east of Rockies	1,860,500	1,841,750
Increase		18,750
Total Production in U. S.	2,504,400	2,499,950
Increase		4,450
Crude Oil Imports	171,850	140,000
Increase		31,857
Total Crude Supply	2,676,257	2,639,950
Increase		36,307

OKLAHOMA

	May 7	April 30
North Braman	6,350	6,450
South Braman	3,500	3,450
Blackwell	3,900	4,000
Hubbard	7,650	8,050
Thomas	1,500	1,450
Tonkawa	22,950	22,750
Garber	16,150	16,100
Burbank	42,000	42,300
Osage, outside Burbank	35,100	35,050
Watchorn	2,450	2,500
Cushing	21,250	21,250
Yale Jennings	11,700	11,750
Davenport	3,500	3,450
Bristow-Slick	27,250	27,250
North Okmulgee	17,250	17,250
Lyons-Deaner	4,350	4,400
Stroud	1,550	1,500
Cromwell	13,150	12,850
Papoose	7,150	6,750
Wewoka	20,850	21,400
Seminole	291,000	288,850
Earlsboro	63,500	53,000
Duncan district	7,400	7,350
Graham	7,700	7,700
Fox	1,800	1,800
Healdton	14,800	15,000
Hewitt	10,000	10,000
Scholem-Alechem	15,000	15,100
Others	64,500	64,250
Total Oklahoma	745,250	733,000
Increase		12,250

KANSAS

	May 7	April 30
Greenwood County	39,400	39,600
Florence-Covert	1,900	1,900
Peabody-Elbing	3,850	3,850
Eldorado-Towanda	13,250	13,250
Augusta-Fox-Bush	4,600	4,600
Rainbow Bend	2,400	2,400
Russell	3,200	3,200
Churchill	17,150	16,800
Others	29,350	29,300
Total, Kansas	115,100	114,900
Increase		200

NORTH LOUISIANA

	May 7	April 30
Homer	5,100	5,150
Haynesville	7,750	7,750
Caddo, light	9,900	9,950
Caddo, heavy	3,300	3,450
De Soto, Red River	3,750	4,250
Elm Grove	600	600
Bellevue	1,450	1,550
Cotton Valley	5,700	5,850
Urania	8,100	8,550
Total, North Louisiana	45,650	47,100
Decrease		1,450

ARKANSAS

El Dorado	6,000	6,000
Smackover, light	11,100	11,250
Smackover, heavy	85,850	79,600
Stephens	1,350	1,400
Nevada	1,450	1,400
Lisbon	4,200	4,250
Others	100	100
Total, Arkansas	110,050	104,000
Increase		6,050

Texas (Outside Gulf Const)

Panhandle District:		
Hutchinson County	109,250	105,500
Carson County	14,100	12,700
Gray County	8,250	9,050
Wheeler County	3,250	3,500
Others	50	50
Total, Panhandle	134,900	130,800
Increase		4,100
North Texas		
Burkburnett	13,000	13,150
Electra	13,850	14,000
Iowa Park and K-M-A	3,700	3,900
Wilbarger	14,000	14,050
Archer County	29,200	29,550
Montague-Cooke	14,200	14,350
Others	900	900
Total, North Texas	88,850	89,900
Decrease		1,050
West Central Texas		
Stephens County	9,050	9,100
Eastland-Desdemona	7,250	6,500
Brown County	25,400	29,500
Coleman County	1,250	1,600
Callahan County	4,050	4,250
Shackelford County	11,750	13,250
Young County	8,300	7,800
Throckmorton County	3,000	3,300
Palo Pinto County	1,800	1,900
Jones County	2,400	2,500
Mitchell & Scurry Counties	3,700	3,750
Howard County	2,600	2,800
Reagan County	27,300	26,600
Crane & Upton Counties	64,450	64,450
Pecos County	8,800	2,500
Others	4,100	4,500
Total West Central Texas	185,200	184,300
Increase		900
East Central Texas		
Mexia	11,000	11,000
Currie	600	600
Richland	900	900
Wortham	3,400	3,550
Corsicana-Powell	19,000	19,100
Nigger Creek	5,500	5,650
Total, East Central Texas	40,400	40,800
Decrease		400
Southwest Texas		
Luling	17,500	17,700
Lytton Springs	2,000	2,100
Somerset	1,200	1,200
Laredo District	14,400	14,550
Piedras Pintas	50	50
Others	600	600
Total, Southwest Texas	35,750	36,200
Decrease		450
Total, Texas—(Outside Gulf Coast)	485,100	482,000
Increase		3,100

GULF COAST

Coastal Texas		
West Columbia	11,600	9,900
Damon Mound	900	950
Big Creek	5,400	5,250
Boling	2,100	2,250
Blue Ridge	2,800	2,700
Pierce Junction	8,850	7,550
Humble	3,600	3,700
Goose Creek	8,700	9,000
South Liberty	3,550	3,000
Hull	18,950	19,850
Saratoga	1,100	1,150
Batson	1,450	1,500
Sour Lake	4,700	4,750
Spindletop	53,450	50,700
Orange County	5,600	5,500
Others	5,650	6,250
Total, Coastal Texas	138,400	134,000
Increase		4,400
Coastal Louisiana		
Vinton	5,250	5,400
Lockport	7,100	7,950
Evangeline	900	950
Edgerly	850	900
Others	2,100	2,500
Total Coastal Louisiana	16,200	17,700
Decrease		1,500
Total Gulf Coast	154,600	151,700
Increase		2,900

ROCKY MOUNTAIN

Wyoming

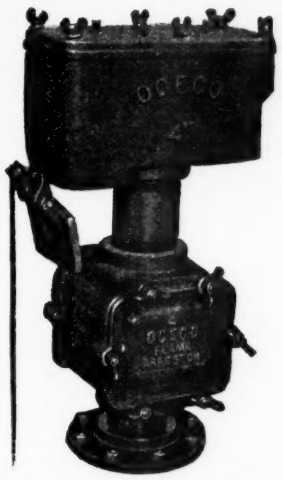
	May 7	Apr. 30
Salt Creek	45,350	49,650
Grass Creek	2,600	2,650
Elk Basin	900	950
Big Muddy	2,850	2,800
Lost Solider	3,600	3,600

Time Tested

OCECO

OCECO

OCECO



Type B Oceco Conservation Vent Unit.

Oceco Safety Tank Winch No. 3.

Two units of a *complete* line of tank equipment.

Ask for the new Oceco Catalog

FOR years Oceco Equipment has been used by leading oil companies the world over.

It has stood the test of time.

In **OCECO** equipment you have this essential—this reliable evidence of satisfactory service *which no other test can give.*

THE OIL CONSERVATION ENGINEERING COMPANY

Headquarters for Tank Equipment

877 Addison Road Cleveland, Ohio

Engineering and Sales Service:

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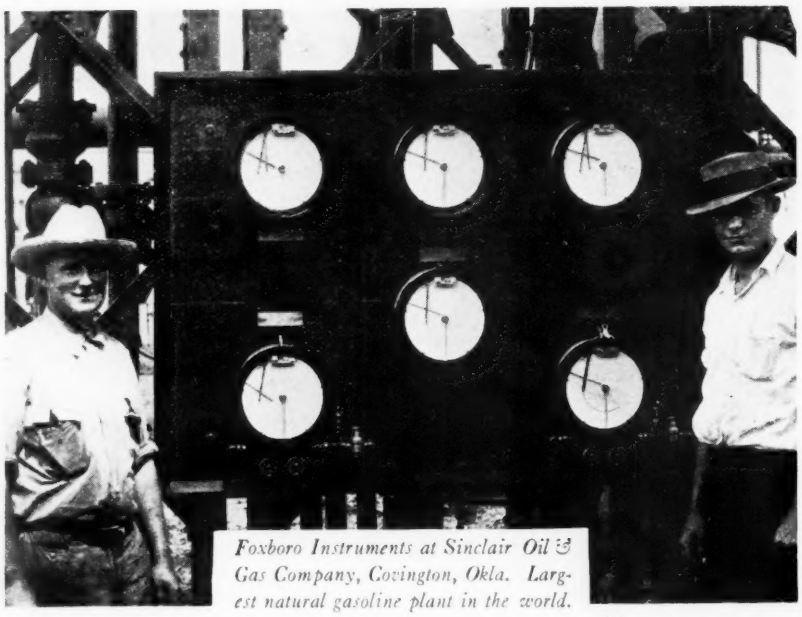
OIL TANK OCECO EQUIPMENT

SAVES EVAPORATION AND PREVENTS FIRE



Foxboro Instruments at Sinclair Oil & Gas Company, Covington, Okla. Largest natural gasoline plant in the world.

Stabilize Still Operation

Stabilized still operation means increased gasoline yield. The only way that this can be accomplished is by eliminating guesswork from still operation.

Foxboro Automatic Controllers, with Full Floating Valve action, not only give you an accurate minute-to-minute report on past and present operations, but actually control the various conditions within extremely close limits. Exact schedules can be followed by the still men.

You cannot purchase a more accurate or dependable controller. It is guaranteed permanent in calibration and is accurate to within less than 1 per cent of total scale range.

It is backed by a national sales and service organization; a branch office is located conveniently near your plant.

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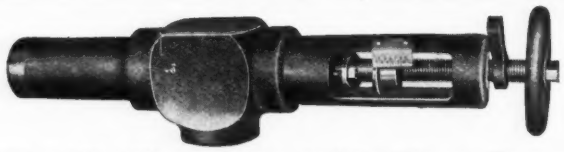
THE COMPASS OF INDUSTRY



The Shaffer Adjustable Flow Bean

positively controls the flow of oil and gas from flowing wells by a slight turn of the hand wheel control, without breaking the oil or gas stream. Precise adjustment of orifice opening to 1/100-inch. Holds back pressure, increasing production, eliminating waste of gas and oil, and prolonging flow-life of well. Gauge shows size of orifice opening. Improved orifice permits greater and smoother flow with less turbulence. Complete information and flow data on request.

SHAFFER TOOL WORKS
Brea, California, U. S. A.

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Robt. N. Atmore Co., Tulsa, Okla.

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Sold by Leading Supply Houses

Rocky River	3,000	3,000
Lance Creek	650	700
Teapot Dome	900	1,300
Others	3,000	2,650
Total, Wyoming	62,850	66,750
Decrease		3,900
Montana		
Cat Creek	2,400	2,350
Sunburst	12,500	12,500
Others	200	200
Total Montana	15,100	15,050
Increase		50
Colorado		
Moffat (Craig)	2,000	1,950
Fort Collins	3,600	3,650
Florence	750	800
Others	3,200	3,250
Total Colorado	9,550	9,650
New Mexico		
Table Mesa	250	200
Artesia	1,950	1,900
Hogback	750	750
Rattlesnake	4,300	4,250
Total New Mexico	7,250	7,100
Total, Rocky Mountain	94,750	98,550
Decrease		3,800

CALIFORNIA

	May 7	Apr. 30
Santa Fe Springs	42,500	42,500
Long Beach	91,500	93,000
Huntington Beach	76,000	77,000
Torrance	23,000	23,000
Dominguez	17,500	17,500
Rosecrans	10,500	10,500
Inglewood	36,500	37,500
Midway-Sunset	89,000	89,000
Ventura Avenue	49,200	53,800
Seal Beach	53,000	50,000
Others	155,200	164,100
Total California	643,900	658,000
Decrease		14,100
EASTERN (Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	110,000	110,500
Decrease		500

Two Tests Unfavorable in Bowlegs

(By Telegraph)

TULSA, May 10.—Production of Seminole district for 24 hours ending this morning was 354,059 barrels from 405 wells. Yesterday it was 351,362. Bowlegs is now producing 97,062 barrels from 47 wells.

In the Bowlegs field, Pure Oil Co. No. 6 Reed, Southwest corner NE SW of 14-8-6 has 500 feet of water in the hole after topping the Wilcox Sand at 4312 feet and looks like a failure. It is an east offset to and 200 feet lower than the Empire No. 1 Lacy, which was originally a 6000-barrel well and still making about 3000. Another unfavorable showing in the field is that of Indian Territory Illuminating Oil Co. No. 3 Youngblood, in Southwest corner NW NW of 24-8-6. This well, which is a quarter mile south of the same company's discovery, got the Wilcox sand at 4405 feet and has 200 feet of water in the hole.

At Earlsboro, Gypsy No. 1 Bora Northwest corner SE of 16-9-5, has a hole full of water in the Wilcox at 4304 feet. Pure Oil No. 2 Day, Northwest corner SW of the same section and a half mile west of production, also has a hole full of water in the Wilcox topped at 4427 feet. Gypsy No. 2 State in this field, northwest corner NE of 16 and quarter mile west of discovery, has been deepened to a new pay and at one foot in, made 398 barrels natural. It originally had the Wilcox at 4246 feet and hole full of water at 4256 feet. New pay was found at 4335 feet.

Oklahoma Again Breaks Output Record As Seminole District Soars

By A. F. Hinton
N. P. N. Staff Writer

TULSA, May 7

ALTHOUGH one peak more or less means little in the present staggering climb of Oklahoma production, it is our duty nevertheless to record that once again the state's output is higher than ever before in history.

According to National Petroleum News estimate, Oklahoma daily average was 744,880 barrels the past week, an increase of 12,095 barrels over the preceding week.

Such figures are almost incredible when one remembers the consternation, price-cutting and proration that beset us when production got up to the terribly high figure of 540,000 barrels a day in 1924.

Not only is production at a figure so high that it was never even dreamed of before it became an actuality, but prospects are that it will remain near its present position for many months to come. The Bowlegs field is rushing toward production comparable to that attained by the original Seminole pool, while Earlsboro also is increasing rapidly and has added greatly to its proven area in the past few weeks. Our most conservative estimators now believe the end of 1927 will see the Seminole district still making in the neighborhood of 300,000 barrels a day. Not a cheerful prospect, but one that must be faced by the industry, for there doesn't seem to be any help for it.

WHILE we are on the subject of peak production, it may be well to mention at this point that the Seminole district recorded a new high for the 24 hours ending at 7 a.m. May 10, when the four fields produced 363,650 barrels from 391 wells. The day before it had also set a peak but that record lasted only 24 hours. Since reaching its present high mark, the field has declined to about 349,900 barrels, but may be expected to shoot up again at any moment.

The old Seminole pool, in township 9-6, is now down to 164,300 barrels a day, or nearly 100,000 barrels below its peak of Feb. 22, but all of this slack has been more than taken up by Earlsboro and Bowlegs, the last-named field being up to 92,000 barrels at present, with 40 wells drilling below 3700 feet, all of which should be in the sand within three weeks. It is within two wells of 100,000 barrels a day and should arrive at that way-station in the next few days.

The Seminole district now has 401 wells producing 351,430 barrels daily, an average of about 874 barrels per well, a remarkably high figure for so large a number of wells. Seminole proper, with 268 wells, is making 163,722 barrels, or 610 barrels per well. Bowlegs, with 47 wells, is producing 92,018 barrels, a per-well average of about 1960 barrels. At Earlsboro, 53 wells are making 61,785 barrels, or 1162 barrels per well.

SEARIGHT, smallest of the four fields, is producing 32,905 barrels from 35 wells, a per-well average of 910 barrels. The figures given are for today, while detailed production in the table accompanying this article is that of yesterday, May 6.

Although its production of 73,165 barrels is considerably below its high figure of two weeks ago, the Carter Oil Co. is still far in the lead in Seminole output. As shown in the table accompanying this article, Carter has 10,185 barrels from four wells at Bowlegs, 13,305 barrels from 12 wells at Searight, and 49,765 barrels from 47 wells at Seminole, with nothing at Earlsboro. Nearest competitor to the Carter Oil Co. is the Indian Territory Illuminating Oil Co., which has 40,139 barrels daily production in the two fields, Bowlegs and Seminole, in which it operates.

Carter Oil Co., with its subsidiary, the Oklahoma Pipe Line Co., is currently handling more than 100,000 barrels daily out of the Seminole area. It is interesting to note that up to May 1, the Carter had handled 10.5 million barrels of Seminole crude out of the district's total production of 41 million. Its own production up to then had been 6.3 million barrels, leaving 4.2 million barrels which it had purchased and run or had bought from its royalty owners.

AS an illustration of the magnitude of the task involved in handling this amount of oil in 13 months, Carter officials state that the company has had

Drilling Operations in Oklahoma, Kansas and Texas

	May 7 Loc.	Rigs	Drg.	S.D.	Total	Week Ended April 30 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	1	4	26	6	37	...	8	23	8	39
Other Osage	12	10	21	10	53	15	6	25	12	58
Bristow-Cushing	10	3	81	7	101	8	3	79	10	100
North Oklahoma	4	7	93	37	141	4	13	94	36	147
South Oklahoma	16	21	163	43	243	21	18	162	50	251
Muskogee	...	8	28	20	56	...	5	28	21	54
Okmulgee-Bristow	7	45	82	32	166	7	50	86	34	177
Tonkawa	...	...	6	0	6	...	...	7	...	7
Seminole Dist	55	76	467	34	632	40	63	467	42	612
Total Oklahoma	105	174	967	189	1435	95	166	971	213	1445
KANSAS	47	57	156	85	345	54	53	146	102	335
TEXAS										
Central	...	119	237	196	552	...	118	309	171	598
East	...	4	12	9	25	...	2	10	11	23
Panhandle	...	91	264	106	461	...	90	279	102	471
N. Central	...	65	87	33	185	...	53	89	28	172
West	...	101	133	77	311	...	96	155	72	323
Laredo	...	4	37	16	57	...	5	21	1	27
Total Texas	...	384	770	437	1591	...	366	863	385	1614
GRAND TOTAL	152	615	1893	711	3371	149	585	1980	700	3414

Drilling Operations, Seminole District, as of May 7, 1927

Field	Locations	Rigs	Less than 2000'	2000' to 3099'	3100' to 3700'	Below 3700'	Total
Seminole*	2	5	12	17	22	42	100
Searight**	0	2	3	5	1	18	29
Bowlegs	11	30	12	34	57	40	184
Earlsboro	22	30	9	12	25	25	123
Total	35	67	36	68	105	125	436

*Seminole includes all of township 9-6, except sections 2, 3, 4 and 10.
**Searight includes all of township 10-6, and sections 2, 3, 4 and 10-9-6.

Summary of Seminole District by Companies having more than 10,000 barrels daily production

Company	Bowlegs Wells	Bowlegs Prod.	Earlsboro Wells	Earlsboro Prod.	Searight Wells	Searight Prod.	Seminole Wells	Seminole Prod.	Total Wells	Total Prod.
Amerada	7	11,475	4	14,108	0	0	4	6,798	15	32,381
Carter	4	10,185	0	0	12	13,305	47	49,765	63	73,165
Gypsy	5	7,280	8	17,939	0	0	23	8,814	36	34,033
I. T. I. O.	13	32,047	0	0	0	0	26	8,092	39	40,139
Mid-Cont	1	952	1	995	5	7,250	15	3,655	22	12,852
Prairie	3	5,940	1	525	10	7,680	12	5,225	26	19,370
Pure	3	6,295	0	0	1	850	18	11,296	22	18,441
Sinclair	5	8,860	1	0	1	1,320	15	6,530	22	16,710
Barnsdall	0	0	2	7,338	0	0	11	8,013	13	15,351
Tidal	0	0	0	0	0	0	24	11,745	24	11,745
Turman	0	0	0	0	0	0	9	11,522	9	11,525

A Battery of "4000 foot" METRIC meters

on the job for St. Louis Southwestern Railway shops at Tyler, Texas

ALTHOUGH the "4000-foot Metric" was introduced to the gas industry only last spring, this installation is typical of hundreds of these large volume measuring machines that have already been put in service.

The five meters shown have a maximum capacity of 37,500 cu. ft. of gas per hour. The installation has been entirely satisfactory.

The 4000-foot Metric has been evolved from a vast experience in making gas meters for the special purpose of measuring gas in large volume—*accurately*. For this purpose it is the nearest perfect mechanism ever produced.

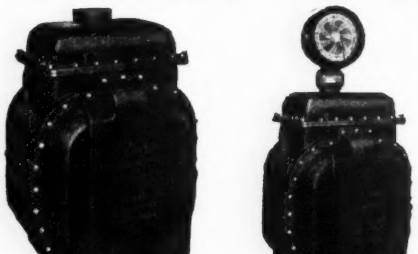
This style meter is made in two sizes and is designed and rated as called for by American Gas Association specifications.

Respective safe measuring capacities are 4000 and 8000 cubic feet per hour at 2-inch loss through the meter.

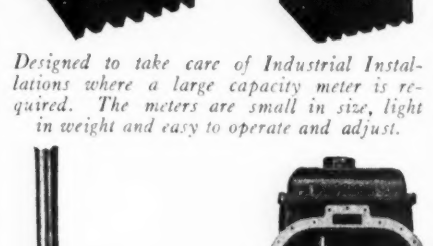
A brief circular describing these meters will be gladly sent upon request.

Write for Descriptive Pamphlet

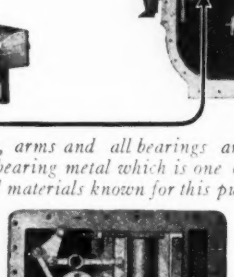
Details of the METRIC "4000 foot" meter—



Designed to take care of Industrial Installations where a large capacity meter is required. The meters are small in size, light in weight and easy to operate and adjust.



The links, arms and all bearings are made of a special bearing metal which is one of the best slow speed materials known for this purpose.



Top view showing the valve table with valve and arm construction. Note the slight lateral movement necessary in operation.

METRIC METERS

WESTCOTT & GREIS, Inc.
Sales Service
DALLAS TULSA LOS ANGELES

METRIC METAL WORKS
of the American Meter Company, Inc.
ERIE · PENNSYLVANIA · U·S·A·

Seminole District Production By Companies and Leases, May 6 and Apr. 29, 1927

Company	Farm	S.T.R.	May 6 No. Wells	May 6 Prod.	Apr. 29 No. Wells	Apr. 29 Prod.
BOWLEGS						
Amerada	Rascoe	15– 8–6	7	11,475	7	11,375
Atlantic	Jones	16– 8–6	2	265	2	265
Carter	Bowlegs	15– 8–6	1	350	1	3,845
Carter	Walker	15– 8–6	1	2,100	1	3,640
Carter	Wise	23– 8–6	2	7,735	2	9,385
Total Carter			4	10,185	4	16,890
Empire	Lacey	14– 8–5	1	2,958	1	4,087
Gypsy	Walker	15– 8–6	4	6,680	3	5,694
Gypsy	Brown	33– 8–6	1	600	0	0
I. T. I. O.	Davis	13– 8–6	2	2,665	2	5,758
I. T. I. O.	Goforth	15– 8–5	3	8,139	2	5,202
I. T. I. O.	Livingston	15– 8–6	3	5,542	3	3,007
I. T. I. O.	Walker	15– 8–6	3	8,220	2	1,075
I. T. I. O.	Youngblood	24– 8–6	2	4,481	2	6,128
Total I. T. I. O.			13	32,047	9	21,170
Mid-Cont	Baker	10– 8–6	1	952	0	0
Prairie	Gahagan	23– 8–6	1	4,050	0	0
Prairie	Harber	10– 8–6	2	1,890	0	0
Total Prairie			3	5,940	0	0
Pure	Reed	14– 8–6	3	6,295	0	0
Roxana	Taylor	16– 8–6	1	279	1	458
Sinclair	Adams	22– 8–6	1	0	1	160
Sinclair	Bowlegs	22– 8–6	1	315	1	140
Sinclair	Harjo	14– 8–6	2	7,945	2	9,180
Sinclair	Walker	22– 8–6	1	600	0	0
Total Sinclair			5	8,860	4	9,480
TOTAL BOWLEGS			45	86,536	34	73,735
EARLSBORO						
Amerada	Anderson	15– 9–5	3	7,207	3	9,191
Amerada	Cowden	4– 9–5	1	6,901	1	5,904
Total Amerada			4	14,108	4	15,095
Barnsdall	Savolka	15– 9–5	1	4,508	0	0
Barnsdall	Smith	15– 9–5	1	2,830	1	5,159
Total Barnsdall			2	7,338	1	5,159
Crosbie	Bryant	9– 9–5	1	5,580	1	6,410
Gypsy	Bora	16– 9–5	1	0	1	0
Gypsy	Earl	16– 9–6	1	0	1	0
Gypsy	McFarland	9– 9–5	2	3,367	0	0
Gypsy	Peter	10– 9–5	1	4,472	0	0
Gypsy	State	16– 9–6	3	10,100	3	12,347
Total Gypsy			8	17,939	5	12,347
Independent	Knappen	9– 9–5	1	2,937	1	1,965
Magnolia	Holmsley	11– 9–5	1	7,113	1	6,608
Mid-Cont	McCumber	9– 9–5	1	995	1	1,160
Phillips	Graham	9– 9–5	1	352	1	1,280
Philmack	Dobbs	8– 9–5	1	3,180	1	4,447
Prairie	Baker	24– 9–5	1	525	1	240
Sinclair	Foreman	18– 9–5	1	0	1	0
Shallow Sand			31	4,875	30	4,600
TOTAL EARLSBORO			53	64,942	48	59,311
SEARIGHT						
Carter	Davis	4– 9–6	5	10,005	5	10,390
Carter	Frazier	3– 9–6	3	3,200	2	2,830
Carter	Kiker	2– 9–6	1	0	1	10
Carter	Scott	26–10–6	1	50	1	60
Carter	Stewart	34–10–6	2	50	2	90
Total Carter			12	13,305	11	13,380
Gypsy	Cudjo	4– 9–6	1	1,003	1	1,080
Mid-Cont	Grayson	34–10–6	5	7,250	4	6,065
Prairie	Cannon	33–10–6	1	0	1	0
Prairie	Carter	10– 9–6	1	30	1	30
Prairie	Houck	30–10–6	1	15	1	15
Prairie	Kinkade	33–10–6	7	7,635	7	7,110
			10	7,680	9	7,125
Pure	Aldridge	3– 9–6	1	850	1	950
Searight	Youngblood	33–10–6	2	0	2	0
Sinclair	Polly	3– 9–6	1	1,320	1	1,435
Twin State	Cudjo	4– 9–6	1	1,467	1	1,595
Wilcox	Chupco	4– 9–6	2	1,177	1	565
TOTAL SEARIGHT			35	34,052	31	32,195
SEMINOLE						
Amerada	Fixico	23– 9–6	4	3,313	4	3,241
Amerada	Rentie	23– 9–6	4	2,225	4	2,544
Amerada	Killingsworth	23– 9–6	4	1,260	4	1,426
Total Amerada			4	6,798	12	7,221
Atlantic	N. Cudjo	26– 9–6	4	812	4	1,933
Atlantic	J. Cudjo	36– 9–6	2	145	2	129
Barnsdall	Carter	24– 9–6	9	5,920	9	5,917
Barnsdall	Jones	34– 9–6	2	3,093	2	4,901
			11	8,013	11	10,818

Company	Farm	S.T.R.	May 6 No. Wells	May 6 Prod.	Apr. 29 No. Wells	Apr. 29 Prod.
Carter	B. Carter	24– 9–6	2	200	2	190
Carter	J. Carter	24– 9–6	4	135	4	130
Carter	F. Carter	24– 9–6	4	870	4	1,040
Carter	R. Cudjo	35– 9–6	3	3,990	3	5,320
Carter	W. Cudjo	34– 9–6	1	1,050	1	1,250
Carter	Gilliland	27– 9–6	1	1,185	1	1,380
Carter	Grisso	23– 9–6	7	3,855	7	4,630
Carter	Knapp	13– 9–6	3	2,175	3	2,462
Carter	Killingsworth	34– 9–6	11	20,975	11	23,375
Carter	Lukes	27– 9–6	3	3,110	3	3,685
Carter	Simpson	35– 9–6	2	110	1	95
Carter	Strothers	34– 9–6	2	9,340	2	7,530
Carter	Vierson	23– 9–6	4	2,780	4	3,250
Total Carter			47	49,765	46	54,607
Empire	Wilson	34– 9–6	3	3,235	3	3,970
Gypsy	Butler	35– 9–6	3	1,769	3	1,925
Gypsy	Carter	24– 9–6	8	2,446	8	3,201
Gypsy	Fixico	26– 9–6	5	235	5	150
Gypsy	Harjo	25– 9–6	2	1,037	2	1,325
Gypsy	Wolfe	26– 9–6	5	3,327	5	3,824
Total Gypsy			23	8,814	23	9,425
Independent	Fixico	26– 9–6	8	1,646	8	1,361
Independent	P. Fixico	23– 9–6	3	798	3	839
Independent	Jones	26– 9–6	4	702	4	879
Total Independent			15	3,146	15	3,079
I. T. I. O.	Bowlegs	26– 9–6	9	4,713	9	4,658
I. T. I. O.	Goodin	23– 9–6	4	1,103	4	615
I. T. I. O.	Harjo	24– 9–6	4	990	4	1,086
I. T. I. O.	James	24– 9–6	5	1,188	5	672
I. T. I. O.	Reed	24– 9–6	3	38	3	38
I. T. I. O.	Marcy	13– 9–6	1	60	0	0
Total I. T. I. O.			26	8,092	25	7,069
Kingwood et al	Johnson	22– 9–6	5	4,758	5	4,701
Magnolia	Franks	25– 9–6	2	2,080	2	2,044
Mid-Continent	Rentie	14– 9–6	8	2,570	8	2,829
Mid-Continent	Tayeche	24– 9–6	7	1,085	7	1,265
Total Mid-Continent			15	3,655	15	4,094
Mid-Kansas	Johnson	25– 9–6	1	990	1	910
Mid-Kansas	Pressley	3– 8–6	1	448	1	560
Total Mid-Kansas			2	1,438	2	1,613
Philmack	Butler	35– 9–6	1	1,880	1	2,020
Phillips	Strothers	27– 9–6	1	0	1	0
Prairie	Gross	25– 9–6	5	210	5	265
Prairie	Spencer	13– 9–6	1	0	1	25
Prairie	Strothers	27– 9–6	6	5,015	5	5,450
Total Prairie			12	5,225	12	5,770
Pure	Strothers	26– 9–6	17	10,906	17	11,956
Pure	B. Strothers	36– 9–6	1	390	1	425
Total Pure			18	11,296	18	12,381
Roxana	Harber	22– 9–6	2	382	2	1,796
Roxana	Lashley	22– 9–6	2	432	2	557
Total Roxana			4	814	4	2,353
Sinclair	Carter	13– 9–6	2	40	2	50
Sinclair	Cudjo-A	35– 9–6	6	1,885	6	1,625
Sinclair	Cudjo-B	35– 9–6	3	2,075	3	1,995
Sinclair	Fixico	23– 9–6	4	2,530	4	3,465
Total Sinclair			15	6,530	15	7,135
Slick T. B.	Franks	35– 9–6	7	4,895	7	3,658
Slick T. B.	Cudjo	35– 9–6	2	3,330	2	2,731
Slick T. B.	Giblet	35– 9–6	1	152	1	1,399
Slick T. B.	Born	35– 9–6	1	0	1	0
Total Slick			11	8,377	11	7,788
Superior	Cudjo	35– 9–6	4	5,118	4	5,445
Texas	Mayhue	14– 9–6	1	105	1	105
Tidal	Carter	24– 9–6	5	2,875	5	3,265
Tidal	Fixico	26– 9–6	7	3,790	7	4,290
Tidal	Harjo	23– 9–6	6	420	6	540
Tidal	Mahardy	24– 9–6	4	780	4	775
Tidal	Tayeche	25– 9–6	2	3,880	2	3,960
Total Tidal			24	11,745	24	12,830
Turman	Cudjo	35– 9–6	4	3,415	4	3,269
Turman	Grisso	35– 9–6	1	357	1	1,435
Turman	Jones	34– 9–6	4	7,550	3	7,360
Total Turman			9	11,522	8	12,064
TOTAL SEMINOLE PROPER			267	164,363	264	179,442
GRAND TOTAL SEMINOLE DISTRICT			400	349,893	378	344,688

to ship out 670,000 barrels by tank car and to place in steel storage 2.93 million barrels of crude, in addition to the oil handled through the trunk line of the Oklahoma Pipe Line Co.

Up to Jan. 1, 1927, the Carter Oil Co. had handled 2,800,000 barrels of Seminole crude, of which two million barrels were purchased on the comparatively high crude market prevailing at that time. Since that time, it has handled 7.7 million barrels, of which about 5.5 millions were its own production. In the past 120 days, therefore, the Carter's Seminole runs over and above its own production have averaged 18,330 barrels daily.

New wells have been coming in thick and fast at Bowlegs, six new producing leases having been added to its list, while the names of three companies have been added to the roster of its producers. These are the Pure Oil Co., Prairie Oil & Gas Co., and Mid-Continent Petroleum Corp., all of whom drilled in their first Bowlegs wells during the past week. There are now 11 companies produc-

Completions in Oklahoma and Kansas, Week Ending May 7

Beckham County

Company	Well No.	Location	Depth	Initial Prod.
Magnolia	1	SWc NW NW 28-9-23W	2670–2702	68M

Caddo County

Company	Well No.	Location	Depth	Initial Prod.
Abernathy	1	C SW NW 23-5-11W	T.D.2508	Dry

Carter County

Company	Well No.	Location	Depth	Initial Prod.
Westheimer	3	SEc 18-1-3W	T.D.3150	Dry
Wirt Franklin	1	NEc SW 11-2-3W	T.D.3543	Dry
Humble	3	NWc SW SW 18-1-3W	2846–2981	100
Magnolia	4	NWc SW 19-1-3W	2150–2330	17M
Magnolia	2	NWc SW NW 29-1-3W	2963–2973	100
Magnolia	9	SEc SW SE SW 34-1-3W	2338–3170	100
Humble	5	NEc SW SW 2-2-3W	2871–2913	720
Magnolia	1	NEc NW NE 10-2-3W	2630–3060	150, 15M
Roxana	1	NEc SW NW 11-2-3W	2796–3217	185
Franklin	7	NWc NE SE 27-2-3W	2119–2254	30
Coline	4	NWc NE 7-2-2W	2283–2435 OWD	30
Magnolia	6	NWc NE NE 21-2-2W	1409–1440	22
Simpson-Fell	3	SWc SE NW 9-4-2W	1787–2367	46

Creek County

Company	Well No.	Location	Depth	Initial Prod.
Smith et al	3	SWc NE SE SE 19-19-8	2323–2354	5M
Elson et al	2	NWc NE SE NW 12-17-10	2435–2451	25
Thompson-Black	1	NEc SW NW 16-17-11	1847–1969	2M
Stoker et al	3	SEc NE NW SW 16-16-9	3030–3041	15
Independent	1	SEc SW NE 18-14-10	2813–2822	50
Slick	2	NWc SE SW 32-14-10	3402–3421	40
Prairie	1	NEc NW NW 10-17-9	1981–1992	20
Walters et al	1	SEc NE SE 30-18-8	3695	Dry
Cole et al	1	SWc NW NE 22-18-11	T.D.2678	Dry
Henry et al	1	C NW SE 1-17-10	T.D.3018	Dry

Garfield County

Company	Well No.	Location	Depth	Initial Prod.
Sinclair	39	NEc SW NW 19-22-3W	T.D.3325	Dry

Grady County

Company	Well No.	Location	Depth	Initial Prod.
Hall-Briscoe	1	C NE SE 35-5-8W	T.D.2403	41M
Magnolia	3	CNL S½ SE NW 14-4-8W	2485–2500	16M
Carter	1	NEc SW SE 21-3-5W	T.D.3056	Dry
Anderson	1	NEc SE SE 28-3-5W	T.D.1811	Dry

Jefferson County

Company	Well No.	Location	Depth	Initial Prod.
Gypsy	1	SEc NE NW 26-7-6W	T.D.4112	Dry

Kay County

Company	Well No.	Location	Depth	Initial Prod.
Comar	12	NWc SE NE 21-29-1W	3383–3417	52
Comar	1	SEc NW 21-29-1	3310–3355	465
Comar	10	NWc SE NW 21-29-1	3333–3386	158
Harold	2	SEc NW 4-27-1W	3400–3405	2M
Marland	1	CEL SW 9-25-2W	1131–1139	6½M
Vic	2	SWc SE NE 5-27-1W	3418–3445 OWD	Dry
Prairie	2	NEc NW SE 1-26-2W	3578–3600	1022

Muskogee County

Company	Well No.	Location	Depth	Initial Prod.
Denton et al	1	CWL NE NW 16-15-17	T.D.1469	Dry

Okfuskee County

Company	Well No.	Location	Depth	Initial Prod.
Reems et al	1	NWc SE 25-13-10	3467	Dry
Josey	5	NEc SE NE 32-12-11	3643–3648	25
Burk-Greis	1	NEc SE NE NE 1-10-9	3155–3178	22M

Okmulgee County

Company	Well No.	Location	Depth	Initial Prod.
McDonald	1	SEc 24-16-13	1662–1666	10
Phillips	1	CEL NW NE 4-14-12	2664–2676	35
Hampton et al	1	NEc SE NE 31-12-12	1192–1242	10
Sheridan	1	SWc SE NW 33-15-12E	T.D.2702	Dry
Barbara	9	NEc NW SE 34-13-14	T.D.2706	Dry
Hahn	1	NEc SE NE 20-12-13	T.D.2420	Dry

Osage County

Company	Well No.	Location	Depth	Initial Prod.
Phillips	10	SEc NW NW 7-27-6E	2946–2978	125
Midland	1	SEc NE SW 23-27-11	1087–1112	15
Phillips	7	NWc SE SE 20-26-6	2890–2930	100
Skelly	12	SWc NW NW 28-26-6	2884–2938	160
Texas	13	NEc NE NW NE 30-25-8E	2450–2468	60
Texas	14	SWc SW NW NE 30-25-8	2430–2462	80
Barnsdall	1	NWc NE 3-25-5	T.D.3077	Dry
Texas	5	NWc SW SW 29-25-8	T.D.2482	Dry
Peters	1	NEc NW 6-21-10	T.D.2172	Dry
Peters	1	NWc NE 6-21-10	T.D.1255	Dry

Pawnee County

Company	Well No.	Location	Depth	Initial Prod.
Gypsy	1	SEc NE SW 21-21-6E	T.D.3530	Dry
Barnsdall	1	SWc NE 16-21-7	T.D.3114	Dry

Payne County

Company	Well No.	Location	Depth	Initial Prod.
Ponca	1	SEc 21-19-1W	T.D.3075	Dry

Pottawatomie County—Earlsboro

Company	Well No.	Location	Depth	Initial Prod.
Philmack et al	2	NEc SE 8-9-5E	4316–4320	7047

Seminole County

Company	Well No.	Location	Depth	Initial Prod.
Roxana	2	NWc SW NE 10-9-6	3685–3687	¾M
Roxana	1	SEc SW SE 22-9-6	4169–4193 OWD	1658
Carter	7	SWc NE NW 23-9-6	4079–4109	1965
Carter	1	NEc NW SW 23-9-6	4200–4237	1500
Carter	2	NWc SW 23-9-6	4248–4271	100
Carter	2	NWc NE SE 35-9-6	4102–4130	2805
Slick	2	SWc SE SW 35-9-6	4120–4160	281
Independent	1	NWc SE 7-9-8	3243–3283	41
Sinclair	3	SWc SE SE 14-8-6	4360–4367	6865
Amerada	3	NEc NW SW 15-8-6	4126–4172	1195
Amerada	4	SEc SW NW 15-8-6	4068–4189	1620
Amerada	5	NEc SW NW 15-8-6	4009–4042	1155
Amerada	7	SWc NW 15-8-6	4048–4094	330
I. T. I. O.	4	SWc SE NE 15-8-6	4106–4123	4580
I. T. I. O.	1	NWc NE SE 15-8-6	4111–4134	3450
Carter	2	NWc NE NE 23-8-6	4246–4252	6030
I. T. I. O.	2	NEc NW NW 24-8-6	4334–4336	5197
Carter	9	NEc SE NE 31-8-8	3918–4005	900
Indep. et al	4	NWc SE 32-8-8	4198–4203	67
Prairie	1	SWc NE 24-9-6	4230–4234	405
Prairie	14	NEc NE SE 31-8-8	4161–4165	200
Prairie	3	SWc SE NW 10-9-6	T.D.4407	Dry
Searight	1	SEc NE SE 33-10-6	T.D.2600	Dry
Magnolia	4	NEc SW NW 32-8-8	3902–3975	5133

Stephens County

Company	Well No.	Location	Depth	Initial Prod.
Merrick et al	1	NEc SE 13-1-4W	2536–2626	2800
Skelly	3	SEc NE SE 13-1-4	2564–2808	230
Pace	1	NWc NE 18-1-5W	T.D.2187	Dry

Tillman County

Company	Well No.	Location	Depth	Initial Prod.
Dean et al	1	NEc 6-5-14W	T.D.2007	Dry

Tulsa County

Company	Well No.	Location	Depth	Initial Prod.
Short	1	SEc 32-19-12E	2076–2080 OWD	4M
Denver Fuel	1	Blk 17-6-18-12	2173–2227	50
Dickey	1	Blk 9-6-18-12	2166–2182	10
Ice et al	1	Blk 23-6-18-12E	2216–2229	25

Wagoner County

Company	Well No.	Location	Depth	Initial Prod.
Webb et al	4	NWc SE SW NE 20-16-15	1342–1370	15, 4M
Mitchell	1	NWc NE 14-16-16	1580–1590	2M
Kyle et al	3	C NE NW 2-18-15	T.D.1342	Dry
Webb et al	1	CNL NE NW 4-18-16	T.D.1173	Dry
Bryan-Emery	2	NWc SE NW 26-17-16	T.D. 858	Dry
Thompson	1	NEc NW NW 12-17-17	T.D. 235	Dry
Johnson	2	NWc 14-16-16	T.D.1682	Dry

KANSAS

Butler County

Company	Well No.	Location	Depth	Initial Prod.
Allison et al	7	SWc NW NW 3-28-6E	3082–3092	125
Findiess et al	1	NWc 17-28-3E	T.D.3302	Dry

Cowley County

Company	Well No.	Location	Depth	Initial Prod.
Sutter et al	1	SEc NE NW 22-32-4E	2355–2366	60
Wakefield et al	1	Blk 40 22-32-4E	2277–2305	4½M
McCullough et al	1	NEc SW 22-31-4E	T.D.3510	Dry

Greenwood County

Company	Well No.	Location	Depth	Initial Prod.
Mid-Kans	34	NWc NE NE 31-23-10E	2315–2362	40
Basom et al	1	NEc SE 4-24-10E	T.D.2505	Dry
Sharpless et al	1	SWc NW 6-24-13E	T.D.1637	Dry

Lyon County

Company	Well No.	Location	Depth	Initial Prod.
Super Six	4	SWc SE 24-21-10E	2596–2608	20
Marland	1	SEc 2-21-10E	T.D.2778	Dry

McPherson County

Company	Well No.	Location	Depth	Initial Prod.
Merriman et al	2	SEc SW SW 29-18-2W	2931–2935	10.3M

Marion County

Company	Well No.	Location	Depth	Initial Prod.
Empire	1	NWc NE 13-20-4E	T.D.2635	Dry

Sumner County

Company	Well No.	Location	Depth	Initial Prod.
Derby	2	NWc NE NW SW 25-31-2E	1838–1888	500
Roxana	4	SWc SE NW 25-31-2E	1837–1900	424
Roxana	7	C S½ SE SW 25-31-2E	1817–1896	444
Roxana	3	NEc NW NW SW 25-31-2E	1849–1900	1000
Amerada	1	SWc SE NE 18-35-1E	2275–2310	SM

Completions in North Louisiana and Arkansas, Week Ending May 6

LOUISIANA

Caddo Parish—Vivian

Company	Well	Location	Depth	Yield
Burdord et al	Dambly No. 1	2–20–16	2275	dry aband.
Standish Oil Co.	Allen No. 11	23–22–15	1060	2m. gas
Standard Oil Co. of La.	Stiles No. 180	33–21–16	1835	50
Texas	Long No. 1	15–15–12	845	2m. gas

Red River Parish—Coushatta

Company	Well	Location	Depth	Yield
Magnolia Pet. Co.	Polley No. 14	7–12–10	2820	15

Sabine Parish—Pleasant Hill

Company	Well	Location	Depth	Yield
Beckman & Freeman	Logan No. 1	28–10–12	3272	2m. gas
Moffatt et al	Ollie Moore No. 1	5– 9–12	3232	600

Richland Parish

Company	Well	Location	Depth	Yield
Stovall Drilling Co.	Mitchell No. 1	20–17–6E	2433	7m. gas

ARKANSAS

Stephens

Company	Well	Location	Depth	Yield
Magnolia Pet. Co.	Gosden No. 2	15–15–19	1553	dry aband.
Wesson et al	Culp No. 1	22–15–19	2212	40

Smackover

Company	Well	Location	Depth	Yield
Keene & Woolf	Murphy No. 5	9–16–15	2720	80
Lion O. & R. Co.	Flenniken No. 9	10–16–15	2395	250
Ohio Oil Co.	Murphy No. 6	9–16–15	2697	10m. gas

ing oil in the field. An interesting feature of the week's news at Bowlegs was the results obtained in deepening two wells, which either went into a new sand or found a new pay streak.

One of these wells was Amerada Corp. No. 8 Rascoe, in the NWc SW of 15-8-6. This well had ceased to flow naturally and was being put-on gas-lift, to which treatment it had not responded with extraordinary production. It was decided to drill it deeper and at 4216 feet, or 99 feet below top of sand, it started flowing 140 barrels an hour. Amerada's production on this lease is now 11,475 barrels daily.

Gypsy Oil Co. No. 5 Walker, in the SWc NW SE of 15-8-6, had been mak-

We are being largely both blamed and praised for the present gasoline situation and we accept our share of the responsibility

If it were not for the results obtained with cracking processes, especially the Dubbs Process, there would be at present no complaint about over-production of crude because the present production of crude would hardly serve the necessary needs under old skimming methods

The discovery of new fields is the discovery of great wealth and should be encouraged and promoted to the fullest extent, but bringing the oil to the surface beyond the current needs of the industry should be controlled

But cracking will go on in increasing measure, in aid and protection of conservation of crude

Universal Oil Products Company
Owner of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

Completions in N.-E. Cent., West, Panhandle and N. Texas, Week ended May 7

NORTH AND EAST CENTRAL

Brown County

Company	Well Farm	Location Survey	Depth	Initial Prod.
Florence	4-Newton	Curlong	1250–1266	10
Forrest	2	SAMG	1325–1333	20
Hughes	8	Ryan	1286–1312	1200
McKenna	3-Shore	Betts	1322–1336	200
McKenna	6-Shore	Betts	1310–1330	550
Rex-Pyramid	14-Fry	Stubblefield	1291–1299	50
Texas	34-Lowe	Stubble	1279–1302	305
Texas	41-Lowe	Stubble.	1288–1314	715
Wentz	12-Shore	Betts	1300–1310	40
Wentz	13-Shore	Betts	1325–1334	160
Wentz	14-Shore	Betts	1326–1336	50
Texas	1-Byler	T&NO	1274–1298	90
Southern	1-Morris	CT	1275	Dry
Texas	18-Hickman	Benson	1182–1189	Dry
Simms	1-Gains	H&TB	1504	Dry
Corzelius	1-Marr	Triggle	T.D.1455	Dry
Westbrook et al	1-Turner	H&TB	T.D.1510	Dry
Pandem	1-Turner	Kuykendall	T.D.1218	Dry
Gibson et al	1-White		T.D.1775	Dry
Sorrels et al	1-Gross	Kennedy	T.D.1631	Dry
May et al	1-Byler	T&NO	T.D.1310	Dry
Zoch-McCamey	1-Starkey	Watson	T.D.1502	Dry
Browning	1-Bowden	Sanders	T.D.1258	Dry

Callahan County

Milham	1-Barr	Comal	T.D.2060	Dry
Shaw et al	3-Miller	Comal	T.D.1649	Dry
Deep Rock	1-Gorsuch	TP	T.D.2100	Dry
Warren-Hays	1-Hatchett	D&DA	812– 830	5

Coleman County

Urban	1-Thate	Isom	T.D.2515	Dry
Gracy	1-Newsome	Moses	T.D.2080	Dry
Brann et al	1-Powell	Little	T.D.1378	Dry
Jewell et al	1-Pluger	Shirlock	T.D.2123	Dry

Eastland County

Burk-Greis	1-Jeffreys	BBB&C	T.D.3540	Dry
Gholson	5-Duffer	Mathis	3464–3494	95
Cranfill et al	1-Spencer	H&TC	2991–3003	600

Jack County

Buttram	6-Cullers	Chairs	2095–2102	45

Limestone County

Liles et al	1-Sharp	Varella	T.D.2500	Dry

Mitchell County

California	4-Adams	Lease 2	3070–3080	80
California	3-Pittihlls	Lease 2	2945–3060	85

Shackelford County

Roeser-Pendleton	7-Moberly	TP	T.D.1256	Dry
Magnolia	1-Dyer	TP	T.D.1100	Dry

Stephens County

Tex-Fidel	8-Pratt	TP	1903–2015	30
Mid-Kans	1-Hill	Talley	3163–1386	500
Mid-Kans	2-Richardson	TP	T.D.3385	Dry

Taylor County

Sanger	1-Abilene		T.D.2295	Dry

Throckmorton County

Rosier-Pendleton	3-Matthews	Bk 223	T.D.2009	Dry
Gulf	3-Graham	TEL	1807–1816	45

S. Young County

Sun	5-Donnell	TEL	3343–3351	140
Johnson	1-Ware	Monning	2133–2164	25
Pitzer-West	2-Mitchell	Pier	2155–2180	25

NORTH TEXAS

Archer County

Mear et al	3-Wilson	DL&C	1541–1546	30
Continental et al	1-Wilson	ATNC	1223–1233	40
Shapple	1-Barton	McKinney	T.D.2034	Dry
Young	3-Abney	SP	T.D. 431	Dry
Howard et al	1-Wilson	ATNC	T.D.1640	Dry
Boller	1-Farmer	Boker	T.D.1361	Dry
Roberts	1-Welsh	TEL	T.D.1440	Dry

Clay County

Caldwell et al	1-Douglass	Brinkley	T.D.2512	Dry

Cooke County

Oil Opers	2-Kleiss	Littleton	1585–1596	275
Fain-McGaha	1-Chaffin	Reed	986– 994	30

Montague County

Fleming et al	1-Maddox	Chambliss	840– 995	21.7M
Superior	1-Easley	CRR	T.D.2006	Dry

Wichita County

Clark-Smith	1-Honiker	AB&M	1898	Dry
Continental et al	1-Kemp	Roberts	T.D.1821	Dry

Wilbarger County

Fain-McGaha	1-Waggoner	H&TC	T.D.2405	Dry
Atlantic	1-Fluhman	DL&C	1452–1488	60
Roxana et al	8-Fluhman	DC&L	1457–1494	60

Wise County

Winemiller	1-Miller	Rohus	T.D. 821	Dry
Bridwell et al	1-Graves	TE&L	T.D.1050	Dry

Young County

Moran	4-Stewart	Dawson	T.D. 795	109

PANHANDLE

Carson County

Empire	2-Magnolia	I&GN	2750–3080	250
McMan	1-Percival	I&GN	3160–3240	315
McMan	2-Percival	I&GN	3171–3180	800
Skelly	1-Schaffer	I&GN	3070–3130	1400

Hutchinson County

Goldihne	3-Whittenberg	H&TC	2898–2943	200
Kistler	4-Johnson	A&B	2875–2918	250
Phillips	8-Elva-Whit.	Tomlinson	2890–2945	20M
Japhet et al	7-Smith	M&C	2774–2816	400
Cockrell et al	1-Cockrell	D&SE	2785–2851	2800
Dixon Creek	1-Cockrell	D&SE	2950–3012	480
McMan	1-Cockrell	D&SE	2907–3028	1440

Potter County

Gr. Amarillo	1-Townsite	AB&M	T.D.2000	Dry

Wheeler County

Gibson	3-Bentley	H&GN	2355–2358	290
Tidal	2-Bentley	H&GN	2342–2355	1425
Texas	2-Smith	H&GN	2259–2284	30
Scott et al	1-Jackson	H&GN	T.D.2290	Dry

WEST TEXAS

Crane County

Humble	6-Univ	Univ	2833–2919	2143
Eastland	2-Univ	Univ	2866–2950	946
Gulf Prod	3-State	Univ	2974–3079	60
Gulf Prod	7-State	Univ	2989–3086	600
Humble	8-Univ	Univ	2889–2975	330
Simms	5-Univ	Univ	2944–3005	350
Simms	6-Univ	Univ	2852–2960	700
Simms	7-Univ	Univ	2867–2968	175
Tidal	4-Univ	Univ	2874–2939	1679
Gulf Prod	8-McElroy	CCSD	2722–2830	80

Crockett County

Henshaw	1-Univ	Univ	T.D.1893	Dry

Upton County

Gulf Prod	1-McElroy	CCSD	2923–2996	110
Texas	24-King	CCSD	2057–2082	25
McMann	2-Baker	Denton	2280–2321	60
Roxana	22-Bowens	GC&SF	2035–2111	235
Tex. Pac	7-Lane	GC&SF	1976–2021	240

ing about 2400 barrels a day by agitating, in sand topped at 4062 feet and extending to 4117 feet. It was drilled deeper and at 152 feet another pay was found, the well flowing 4000 barrels in the ensuing 24 hours. This well is 90 feet below top of sand, and neither it nor the Amerada well has made any water.

A new well at Bowlegs is Pure Oil Co. No. 7 Reed, in the NEc SE of 14-8-6, farthest northeast well in the field, and one location (660 feet) north of nearest production. This well is flowing 225 barrels an hour at three feet in the sand topped at 4212 feet. The Pure Oil Co. now has three wells on this 100-acre lease, producing 6295 barrels daily. It also has 16 wells drilling and expects to have several of them in the sand in the next few days. No. 1 on this farm, in the SEc NE SE of the section, a diagonal northwest offset to I. T. I. O. Co. No. 2 Davis, made 6293 barrels initial in the Wilcox from 4278 to 4293 feet.

Prairie Oil & Gas Co. drilled in its No. 7 Gahagan, in the NEc SE NE of 23-8-6, for 4100 barrels at total depth of 4216 feet. This company's No. 3 Harber, in the SWc of 10-8-6, farthest northwest well in the field, is making 1890 barrels at total depth of 4196 feet. Sinclair Oil & Gas Co. got production on a new Bowlegs lease when it drilled in its No. 1 Walker, in the NWc NE NE of 22-8-6. This well is in the Wilcox from 4124 to 4141 feet and is swabbing 600 barrels a day.

Dunn Joins Industrial Petroleum

CHICAGO, May 6—Charles A. Dunn has joined the sales staff of Industrial Petroleum Co., 624 S. Michigan Ave., With Chicago and vicinity as his territory for sale of fuel and gas oils. Mr. Dunn has long been identified with the oil business here and recently was head of the Charles A. Dunn Co.

Oil Industry Fifth in Mexican Investments

CLEVELAND, May 9.—Oil is only a fifth of the total of American investments in Mexico according to figures recently compiled by the Department of Commerce, which is as follows:

Rural property	$166,047,000
Urban property	35,771,000
Oil lands	318,638,000
Refineries	50,070,000
Mines	317,427,000
Smelters	25,180,000
Timber	10,935,000
Railways	248,158,000
Manufacturing enterprises	27,716,000
Merchandising enterprises	26,140,000
Public utilities	30,799,000
Concealed interests	6,938,000
Miscellaneous investments not included above	125,242,000
	$1,389,061,000

Practical Factors in Recovery of Oil By Means of Air and Gas

By Frank M. Brewster
Petroleum Reclamation Co., Bradford, Pa.

Presented Before Natural Gas Association of America, Cincinnati, O., May 9-12

THE economic life of oil fields vary but all eventually reach a point when they are no longer profitable to operate by the ordinary methods of production, except when practiced under the strictest of economy. But this does not mean that the oil is exhausted. There remains in the sand at least four times as much oil as has been produced.

Gas is the most active agent in the expulsion of oil. The sand immediately surrounding a well will get the benefit of maximum pressure and needs it least while oil at a distance will have to move under a reduced pressure during the latter period of extraction. There is also the probability of the gas associated with the distant oil escaping through the depleted parts of the sands in the vicinity of the well without doing useful work. Hence the areas near the well are more completely drained than those at a distance.

It is evident that a propulsive agent must be introduced into the sand to move this relatively dead oil to the hole. The most feasible method of restoring these forces appears to be the forcing of gases into the oil sands. Air, natural gas or a combination of both are the only gases that are available in large quantities and at small cost.

Natural gas under pressure will dissolve in oil, increasing the gravity and volume and decreasing the viscosity of the oil. Movement of the thinner oil can be effected with less energy and greater quantities of oil can be recovered. But this is offset to a certain extent by a tendency for the gas not in solution to break through the thinner oil and by-pass it without doing useful work. Also a gas in solution no longer has any propelling force and must be replaced with other gas to propel the oil to the hole. Dow and Calkin[1] found that natural gas was about four times as soluble in crude oil as air. Hence in using natural gas it will require about four times as much of gas as it will of air, to get the same propulsive force. The gas in solution will break into a gas under reduced pressure but this reduced pressure is not encountered until the oil and gas have moved to within a very short distance of the producing hole and the expanding gas does very little work in bringing oil to the hole.

A COMBINATION of air and gas would probably make a better medium for propelling oil than either one used separately. The gas dissolved in the oil would reduce its viscosity, offset the oxidizing effect of the air and make the oil easier to move while the air would remain in a gaseous state and propel the oil to the hole.

If an air-gas mixture is recycled through the sand it will produce gasoline in the same manner as natural gas and in like quantities for all gases have the same carry power for gasoline vapors. However, it must be remembered that air-gas mixtures are explosive within certain limits while certain limits have been found for explosive mixtures[2] of air-gas under low pressure, it has not been demonstrated that these limits will hold the same or even in direct ratio under high pressures.

Air-gas mixtures should be handled at all times as if they were explosive mixtures and all precautions taken to prevent or at least check the extent of any explosion.

Lightning arrestors or bafflers made of steel shavings, small pipes and other cooling devices copied after the principle of the miners safety lamp have not always worked. It has been assumed that burning gases would be cooled below the ignition point in passing through them and it is reasonable to expect this to be a fact but it is highly probable that after an explosion has taken place, the arrestors function as a highly developed burner, supplying fuel to the burning gases on the low pressure or explosion side of the arrestor.

This would result in an intense heat at that particular point and by conduction would soon heat the arrestor hot enough to ignite the mixture behind it. So it seems very probable that a series of explosions follow after ignition at some point in the high pressure system. If this is true the extent of any explosion would not be confined between arrestors but would travel in the direction of the air-gas supply which would be toward both the compressor and the intake well if the explosion burst the line and no checks were on-line or wells to prevent gas from feeding back from the sand into the line.

A METHOD of inserting a non-flammable gas or pure air slug between air-gas mixtures has been used. This is accomplished by an automatic valve on the suction side of the compressors or gathering system. This valve alternately passes a quantity of air-gas mixture and then a quantity of pure air, thus putting a slug of non-flammable gas between mixtures of air-gas.

This system will not prevent explosions but it should confine the explosion to that particular air-gas mixture in which it occurs as it will be separated from other air-gas mixtures by a slug of non-flammable gas. Aside from the dangers of using pure air or a gas-air mixture of restoring pressure there is the problem of confining this mixture to a certain lease or leases especially if the adjoining property produces gas for domestic and industrial uses. The movement or direction of flow of any gaseous substance cannot be absolutely controlled from the surface.

Any gas that is non-flammable should not be used adjacent to a property that utilizes the gas for fuel purposes unless there is a barrier to gas movement between the two properties. If air becomes mixed with this fuel gas it may cause a serious and disastrous explosion in the distributing system or if a non-flammable gas, such as carbon dioxide or nitrogen, is mixed with this fuel gas the fires may go out and cause asphyxiation or an explosion when flammable gas follows the slug or non-flammable gas.

WHEN gases are forced into a sand they follow the line of least resistance, frequently following the coarser or big pay streaks, if no such streak is present air or gas will tend to follow the higher parts of the structure or the top of the sand, while liquids will tend to follow the lower part of the structure or the bottom of the sand. Air and gas tend to rise to the top of the structure while liquids will seek the lowest level.

Hence it is advisable to locate the air or gas intake wells on top of the structure as there is less resistance to the movement of air or gas through a partially or wholly depleted oil sand and production can be effected quicker than by forcing the oil up through this depleted sand. Another serious factor affecting the choice of inlet and outlet well locations is that when oil is forced or permitted to enter a dry or partially depleted sand some of this oil is lost.

The practice of forcing oil from the bottom or flanks of a structure up through a dry or depleted sand is a serious waste. For every barrel of oil produced in this manner there is left in the

[1] D. B. Dow and L. P. Calkin "Solubility and Effects of Natural Gas and Air in Crude Oil." Bureau of Mines Serial No. 2732.

[2] G. A. Burrell and I. W. Robertson "Effects of Temperature and Pressure on the Explosibility of Methane-Air Mixtures" Bureau of Mines Technical Paper No. 121, 1916. G. A. Burrell and Alfred W. Gauger "Limits of Complete Inflammability of Mixtures of Mine Gases and of Industrial Gases with Air" Bureau of Mines Technical Paper No. 150, 1917.

dry sand three or more barrels of oil that cannot be recovered by any process now known except mining. For these reasons air or gas intake wells should always be located higher on the structure than the producing oil wells and in no case should oil ever be produced through a gas or dry sand.

There has been an erroneous impression throughout the Appalachian field that oil and gas did not conform to structure, regardless of the fact that I. C. White conceived and proved the anticlinal theory in West Virginia many years ago. Detailed subsurface mapping[3] shows that accumulations of oil and gas in many of the eastern fields conforms to structural conditions in the reservoir rocks. The restriction of oil and gas production to anticlines is especially notable in the sands of the lower Mississippian beds and those of the Chemung formation.

Wells having large initial and flush production undoubtedly have more completely drained the sand in their immediate vicinity because of having utilized the high initial gas pressure from areas beyond their radius of oil drainage.

Therefore, it is advisable to make the wells of larger initial production the intake air or gas wells and have less distance and resistance to force the oil that is nearer to the adjoining wells that originally had a smaller initial and flush production.

IN old fields where no records are available, or in fields having a low initial gas volume and pressure, or where the initial and flush production were about the same for all wells it is a method of trial and error to find the best wells for taking air or gas and the best wells for producing.

Reversing the direction of flow of either the oil or gas and air has no detrimental effect on the sand or on recovery as long as the oil is not forced into a dry sand. Gas and air tend to squeeze the oil down into the bottom of the sand with a resultant movement of the oil in a direction toward the bottom of the sand in the producing well.

In preparing a well for taking air or gas or a combination of both it is advisable to thoroughly clean the well of all sand cavings and other debris that might plug up the pores in the sand. A newly drilled well has the advantage over an old well in that the walls of the hole are clean and the pores are not plugged.

All intake wells should be cased or tubed to the top of the oil sand and any open hole below the oil sands should be plugged back, especially if any sands below the oil sands are exposed. Otherwise the gas or air may migrate into sands above or below the oil sand and escape without doing useful work.

Producing wells should be prepared in a like manner, as the air or gas will migrate into other sands, especially if any back pressure is held on the well. But the loss of the air-gas mixture after it has done its work is not the most serious possible loss as it may open up passage ways that will dissipate the pressure and may carry gasoline and oil into sands and reservoirs beyond the reach of any recovery system. Both intake and producing wells require careful preparation for pressure recovery methods.

IN the past it has always been necessary to clean out at infrequent intervals to keep wells producing. This is just as essential with the newer methods of recovery, and is imperative where the formations are soft and subject to caving.

The expense of cleaning out is offset by the greater quantity of air or gas that can be forced into the sand and possibly at lower pressures due to less resistance.

Cleaning out by cable tools is commonly slow and expensive but in some cases where back pressures have to be held on the formations at all times to keep them from caving, cable tools solve the problem very nicely. By means of a fluid head any desired back pressure can be held on the sand while cleaning out.

The use of compressed air or gas to clean out is much cheaper and quicker than any method so far introduced. Especially if high pressure air or gas lines are readily available on the property and if there is sufficient compressor capacity to supply the demand. The equipment for an air cleaning outfit, consisting of a pulling machine, tubing tools and a few high pressure connections are easily moved by a team or a tractor at one load and it only takes a few hours to tear down and move and erect.

If high pressure lines are not laid at strategic points on the lease or if it is not deemed advisable to use the compressed air system of field lines for cleaning out a small portable compressor unit and complement of air-receiving tanks are necessary equipment with the pulling machine. In most cases a well can be cleaned out with air in a week or less.

ONE of the most serious problems in pressure recovery is the producing of the oil. During the early stages the pressure and increased movement of fluid brings in paraffin, sand and muck and frequently causes the walls to cave. Cups are quickly cut out, plungers and barrels wear rapidly and sand up.

Where air is used the balls and seats or similar equipment, working barrels, plungers and tubing commonly corrode very rapidly especially if corrosive waters are present. The alternating action of wetting by water and drying by air may promote rapid oxidation and pitting, even if the water is not corrosive.

This cutting or corrosive action cannot always be eliminated by the use of non-corrosive material as minute flaws in the structure and composition of the metal are quickly eroded.

High differential pressures between intake and outlet wells have a tendency to by-pass and quickly establish channels that are hard to control. If it is necessary to go to high pressures due to tight, fine grained sands a back pressure should be held on the producing well, as a small differential in pressure between the hole and a few feet back into the sand is all that is necessary to cause movement of the oil into the hole. Any higher differential in pressure is a waste of energy at a point where it cannot do any useful work.

It has been demonstrated in laboratory experiments that the drop in pressure due to resistance of gas and liquids passing through a sand is not directly proportional to the distance travelled. The greatest drop in pressure occurs a short distance back from the face of the sand near point of discharge, which shows that a very high back pressure can be held without affecting production.

Bennett[5] and Sclater demonstrated in the Panhandle field that the rate of fluid entering a hole is not affected by pressure until about 85 per cent of the rock pressure is attained, after that pressure is reached the rate of flow is materially decreased.

THE quickest way to find the desired differential pressure is by trial and error with back pressure. The highest back pressure which produces the same amount or slightly less oil than was produced at atmospheric pressure gives the desired differential.

Holding back pressure either by gas pressure on the casinghead or by high fluid head, retards the influx of sand and muck to a considerable extent without materially decreasing the oil production. However, in extreme cases it is necessary to flow the wells by the gas or air lift method as pumping troubles cannot be eliminated.

Walker[6] in his tests on lifting water from gas wells showed that in a well 1750 feet deep with a fluid head of 42 feet, water could be lifted at the rate of 33.28 gallons per hour with gas at a rate of 480 cubic feet per hour, which is a ratio of about 607 cubic feet of gas per 42-gallon barrel water. This was accomplished with a starting gas pressure of 155 pounds and a 1-16-inch jet placed 100 feet off bottom in a ¾-inch syphon line.

However, even with efficient air or gas lifts for producing small wells, the costs will be high. High pressure air or gas lines will be required for each well so operated and separators for gathering the discharged gas will be necessary at least for small groups of wells if not for individual wells.

The complicated system of air or gas recovery combining all phases of producing both oil and gas makes it necessary for complete co-operation of all departments. Also in most fields it will be necessary for all operators to co-operate in restoring pressure. Because of their migratory nature neither oil nor gas can be easily confined within the surface boundary rights and they may be forced across property lines.

[3]Paul V. Torrey—Assistant Petroleum Geologist, U. S. G. S. Personal communication April 18, 1927.

[5]E. O. Bennett and K. C. Sclater "Volume and Pressure Control for Wells on Gas-Lift." Delivered before the annual meeting American Institute of Mining & Metallurgical Engineers at New York February 14 to 18, 1927.

[6]Morgan Walker, "Dewatering Gas Wells by the Gas Lift" Mining and Metallurgy March 1, 1927. Volume 8.

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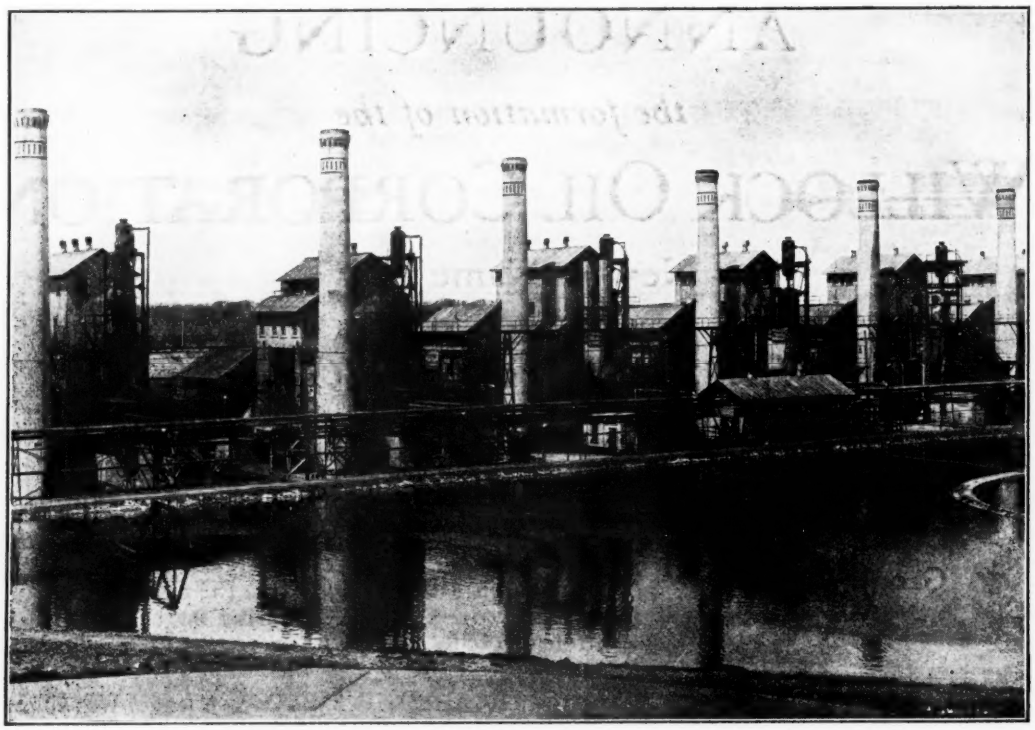

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Natural Gasoline Plants Need More Accurate Pressure Control

By J. V. Thomas
Vice President, Natural Gas Equipment Co., Los Angeles
Presented at April Meeting California Natural Gasoline Association

PART 2

THE entire field of pressure regulation (for natural gasoline plants) may be segregated into six types, namely:

Reducing regulators.
Back pressure regulators.
Gas fuel regulators.
Pump governors.
Vacuum regulators.
Differential, or volume control regulators.

The primary duty of any regulator is to automatically maintain a given pressure within very close limits. The differential regulator maintains a given difference in pressure. Inasmuch as gas fuel regulators and pump governors operate and are constructed exactly like reducing regulators, it is only their application that is classified above. Of course, it is the limits within which it is desired to maintain this given pressure that determine whether or not the regulator should be pilot operated, and this matter rests entirely with the purchaser.

We will now analyze the operation and general application of each of the types mentioned.

Reducing Regulators

The duty of this type of regulator is to take fluid as it is delivered to it at any pressure, reduce that pressure to the pressure desired and automatically maintain that pressure within very close limits. Reducing regulators are always governed by the outlet pressure, the diaphragm being connected to the outlet side. They are so constructed that as the pressure increases on the diaphragm, the valve mechanism closes and as the pressure decreases, the valve opens.

One of the common uses for pressure reducing regulators is for supplying a constant low pressure for gas-engine fuel. Until very recently it has been the practice to install two reducing regulators for furnishing fuel to gas-engine driven compressors. One regulator would reduce the pressure from 30 pounds, or whatever it might have been, to about 5 pounds, and the second regulator would take this 5-pound gas and further reduce it to the desired lower pressure, which sometimes was as low as one or two inches of water pressure.

It is now considered good practice to make this pressure reduction in one stage. Not only is one regulator eliminated, but a much smaller regulator may be used. For example, where a 2-inch high pressure regulator and a 3-inch low pressure regulator would have been required by the two-stage method, one 1-inch reducing regulator is sufficiently large to handle the job alone, and at about one fourth the cost.

Part 1 of this interesting and valuable paper on pressure regulation was published on page 31 of the May 4 issue of National Petroleum News.

The latest type regulators are just as capable of reducing 30 pounds to one ounce as 5 pounds to one ounce, and are equally as reliable. Of course, the same size header is necessary and the small regulator should exhaust directly into the header. The actuating pressure for the diaphragm should be taken off the middle of the header.

This extremely low pressure permits the use of very large diaphragms with which remarkably accurate results may be obtained. For this reason it is unnecessary to use a pilot operated regulator for gas-engine fuel.

A reducing regulator set to maintain the desired pressure can be installed at the inlet to any system in which a fluid pressure is carried, with the assurance of protection against excessive pressure on the equipment. This pertains to instances where the incoming fluid is subject to fluctuation caused from an external and uncontrollable source.

Reducing regulators are used extensively by gas companies for feeding their low pressure distributing systems. Similar uses are made of reducing regulators by the oil companies where it is desirable to prevent excessive fuel line pressures.

Back Pressure Regulators

THE action of regulators in this class is the reverse from the action of reducing regulators and the application is exactly opposite.

Instead of maintaining a constant outlet pressure, back pressure regulators maintain a constant inlet pressure. Such regulators are also known as relief valves, check pressure valves and even the pop valve belongs to this class.

There are many uses for back pressure regulators in absorption plants. The most general applications are:

1. The blow-off regulator, for preventing plant pressure building up when no other disposition can be made of treated gas.

2. A regulator on each other line through which treated gas is transported, such as to lease fuel system and sales lines. This prevents the plant from suffering the fluctuations in pressure caused by increasing and decreasing demand for gas.

3. Back pressure regulators installed on gasoline storage tanks and high pressure and low pressure accumulators prevent the rapid vaporization of lighter hydrocarbons caused by any sudden release in pressure.

4. Any other equipment throughout a plant which operates at greater than plant pressure should be controlled at the outlet by a back pressure regulator.

THIS type of regulator is also used in the oil fields to maintain constant casinghead pressures or back pressures on gas and oil separators. Wherever a well is producing into a system in which the pressure fluctuates, these fluctuations affect the well pressure accordingly. Usually this condition is extremely detrimental to the well and may be eliminated by back pressure regulation.

The operation of back pressure regulators as compared with reducing regulators may be clearly defined in this manner:

Back pressure regulators relieve fluid from any system in the same quantities and at the same rate as such surplus fluid is being introduced; reducing regulators introduce fluid into any system in the same quantity and at the same rate as such fluid is being consumed or disposed of.

Gas Fuel Regulators for Steam Boilers

Gas fuel regulators are sometimes called boiler governors or gas steam regulators. Their purpose is to automatically feed gas to burners under boilers in such quantity as to maintain a constant given steam pressure under varying conditions of load. Their action; that is, the way in which they function, is similar to that of reducing regulators in that increased pressure on the diaphragm closes the valve mechanism.

Gas fuel regulators are installed on the gas heater to the burners and steam pressure is connected to the diaphragm. The steam connection may be taken from the main steam header near the boiler or boilers, but preferably from the top of each boiler or steam drum, where the pressure is stationary. Constant steam pressure is recognized as being of vital importance to gasoline plant operation not only from the standpoint of efficiency but by eliminating frequent hand adjustments by plant operators.

This device consists of a balanced valve having two or four ports. The valve is opened by either a weighted lever or spring, and is closed by boiler

steam pressure, thus admitting or shutting off gas as the demand for steam varies. As steam pressure tends to fall, the spring tension or the weighted lever opens the valve admitting more gas to burners, and as pressure tends to rise, the increased force on the diaphragm overcomes the spring tension, partly closing the valve, thus reducing the flow.

The pilot operated fuel regulator is recommended for large boiler plants of 500 horsepower or more, but as previously alluded to in this paper, from the standpoint of efficiency, it is very important to maintain as even a flow to the burners as possible, and in some instances it is necessary to retard the sensitiveness of a pilot operated regulator to effect better combustion efficiency. This is especially true of smaller plants and plants subject to extremely variable steam loads.

Pump Governors

As the name implies, regulators of this type are to control the operation of steam-driven pumps. The valve is installed on the steam supply to the pump and the diaphragm connected to the pump discharge. As the discharge pressure of the pump slightly increases or decreases, the diaphragm mechanism closes or opens the valve, thus decreasing or increasing the speed of the pump to maintain the desired pressure.

Pump governors, boiler fuel regulators and reducing regulators are all similar in design and operation. Wherever it is desired to maintain a constant pump discharge pressure, a pump governor is required. In connection with this subject, we might cite a common application of this type of equipment—for controlling the output of compressors.

A regulator of the reducing type can be installed on the suction to the primary stage with its diaphragm connected to the discharge pressure of the highs. The desired discharge pressure can then be maintained with the entire elimination of hand control, regardless of the size or number of compressors in the plant. In some cases, perfectly satisfactory results may be obtained by installing a small regulator on a bypass and throttle a greater portion of the intake through a hand valve on the main line.

Vacuum Regulators

The chief difference between vacuum and positive pressure regulators is in the diaphragm construction. The spring, or weight, must be so located that it opposes the force exerted by the difference between atmospheric and vacuum pressures. Briefly, vacuum regulators are made to function in two ways which correspond to the function of the regular reducing and back pressure instruments; that is, first, to close when the vacuum increases; or in other words, when the absolute pressure decreases. Second, to open when the vacuum increases. The first type would be installed on the outlet line from a system with the diaphragm connected upstream. The second type would be installed on the inlet line to a system with the diaphragm connected downstream.

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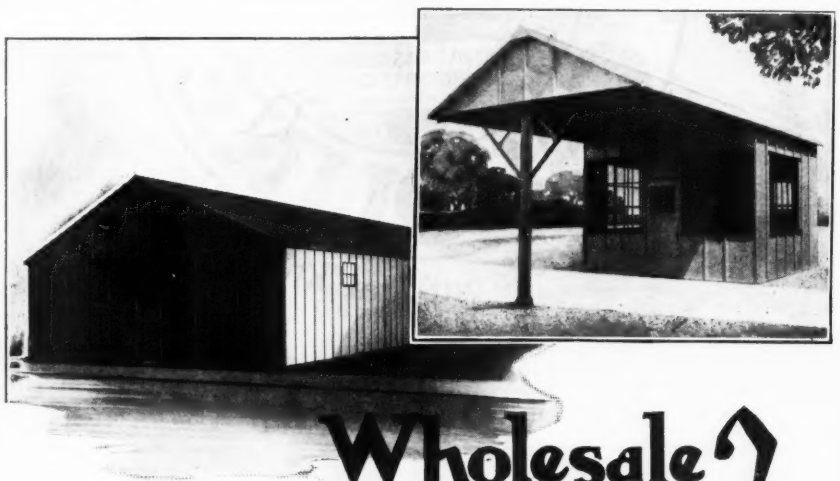

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ing regulators, such as are used to control gas-engine fuel, the low working pressures encountered in vacuum regulation permits the use of extremely large diaphragms, thus eliminating the necessity of pilot operated equipment.

Differential Regulators

All diaphragm operated regulators, whether equipped with weighted lever or spring, are in reality differential regulators, because in any case there are two pressures at work, one of which is generally atmospheric pressure. This latter pressure being comparatively constant, is sometimes forgotten as playing any part in the operation of regulators. Where pressures above atmospheric are regulated, the constant atmospheric pressure works to assist the spring tension. In the case of vacuum regulators, the atmospheric pressure opposes the spring tension, or weight.

The term differential regulators, however, is particularly applicable to a certain class in which both sides of the diaphragm are direct-connected to the fluid being controlled. This type of equipment has many special uses, but mainly is used to control or maintain a desired rate of flow. This is accomplished by maintaining a predetermined difference in pressure between the upstream and downstream sides of an orifice installed in the line through which the fluid is passing. The differential regulator is installed on the same line, either above or below the orifice.

The high pressure side of the diaphragm or, in other words, the side of the diaphragm opposing the spring tension, or weights, is connected to the upstream side of the orifice; the low pressure side of the diaphragm being connected to the downstream side of the orifice. The spring tension, or weights, are set for the desired difference in pressure. Changes in flow may be made either by changing the size of the orifice or altering the adjustment of the regulator. Such equipment is used to maintain a constant rate of flow of oil to absorption towers, or a given rate of flow of gas through a pipe line, etc.

Differential regulators are also frequently used in connection with wells flowing by gas lift, to maintain a constant delivery of dry gas to the well and in the case of heading wells, to automatically increase the volume of gas into the well as the well pressure builds up, and vice versa.

Another type of differential regulator is the differential gas relief valve, which works in conjunction with a multiple orifice meter installation. In order to accurately measure an extremely variable flow of gas with orifice meters it is necessary to have a number of meters connected to different orifices by-passing the main meter and divert gas through the by-passes as required by the changes of flow. The differential relief regulator is designed to automatically open completely, thus placing another meter in service, when the differential becomes excessive, and to automatically close completely when the differential becomes so low that the additional meter is no longer needed.

Texas Holds Back Possible 325,000 Barrels Of Crude Daily

By Paul Wagner
N. P. N. Staff Writer

TEXAS, containing an area of 265,896 square miles and a dozen geological provinces, occupies a peculiar position in the petroleum industry at present. Although producing some 40,000 barrels less crude oil than its high mark of history—657,670 barrels daily in the week ended Nov. 27, 1926—its failure to show a present peak total reflects entirely a condition of curtailment.

Deferred operations in four fields are keeping daily averages at leas 325,000 barrels below a level that could be easily attained did conditions call for extensive development instead of curtailment.

Ample evidence exists that Texas could be producing a million barrels daily within six months if necessary. No such level will be attained, however, under present price conditions and with operating control centered in a few companies in fields where the possibilities mentioned exist.

The four fields that would be immediately felt as market factors were it not for the character of their control are in two geological provinces recognized to be still in the infancy of development. Three of them are in the west Texas salt basin and the other in the area of interior salt domes near Palestine, east Texas.

No account is here taken of additional production that could be readily obtained by drilling programs on Gulf coastal salt domes, which for years have been treated as partly developed reserves; neither is any attempt made to measure the somewhat increased production probable under better industrial conditions in the various other producing provinces of Texas.

The four fields mentioned as being capable of 325,000 barrels minimum possible production under competitive drilling this summer are:

Field	County	Minimum Barrels Possible Daily
Yayes Ranch	Pecos	75,000*
McElroy Ranch	Crane	75,000
Hendricks Ranch	Winkler	75,000
Boggy Creek Dome	Anderson & Cherokee	100,000
Total		325,000

*Some estimates of maximum under intensive development set at 250,000 barrels daily.

Boggy Creek, which will be confined to operations of Humble Oil & Refining Co., and Rio Bravo Oil Co., as detailed on page 53 of the March 30 issue of National Petroleum News, is credited with a minimum ultimate yield of 60,000,000 barrels, and conceivably the field may exceed that final recovery estimate by 100 per cent.

Humble controls all except about 200 acres of the roundly 14,000 acres blocked on and around this interior salt dome. The 200 acres mentioned belong to Rio Bravo, which owns about 17 per cent in roughly 4200 acres pooled by it and the Humble for wildcat development before the discovery well was drilled in for 3000 barrels, or more, pinched down initial production, in March. Humble owns all the rest of the block.

Lease requirements probably will call for the drilling of 25, or more, wells on the Boggy Creek block within the next two years; but the danger of a flush maximum production being reached, after the manner of a Spindletop or a Powell development, is obviated by the nature of Boggy Creek's control.

SOMEWHAT similar conditions of control exist on the McElroy ranch operated by Gulf Production Co., in the west Texas salt basin, except that competitive line drilling along the northern boundary of the 27-section block is forecast. The E. A. Landreth interests of Breckenridge control 260 acres of excess survey land north of the McElroy ranch, a considerable part of which lies between the Gulf's development and the University (Church & Fields) pool of northeastern Crane county.

This excess strip threatens to be the scene of a line drilling fight, but once that is out of the way the Gulf may drill its McElroy acreage as leisurely as it pleases.

Even with the line fight in prospect it is not on the cards that McElroy ranch production will reach anywhere near the minimum of 75,000 barrels possible daily production accredited to it were intensive development pursued. The McElroy ranch has been recently making about 12,000 barrels daily, but it would be only necessary to start a drilling campaign to put production up to 75,000 to 100,000 barrels daily.

University pool, which is separated from the McElroy area only by the Landreth excess strip, is generally recognized as being structurally related to it. However, because of the acreage control that prevents competitive drilling against any part of the McElroy except the north boundary the Gulf's property is treated as a unit controlled field. It has been estimated that the Gulf's proved ground on the McElroy totals 8000 acres and that a final recovery of 100,000,000 barrels may be reasonably expected.

The University pool, where the original block was sold off in 40, 80 and 160-acre pieces after the discovery well had been completed about a year ago, recently attained daily average production of about 35,000 barrels. The flush having gone off the larger wells it is now believed the field mark will not reach materially higher, in terms of daily averages, because of a disposition on the part of operators not to push competitive drilling too hard.

THE Yates ranch field, in southeastern Pecos county, continues to be under control of the Mid-Kansas Oil & Gas Co., operating on Transcontinental Oil Co. acreage; their block embracing the main part of a great structure found productive at drilling depths of 1000-1250 feet. Although four wells of the partnership are capable of producing upwards of 12,000 barrels daily (page 53, April 20, 1927 issue of National Petroleum News) only about 2500 barrels of oil is now being taken out daily.

Structural conditions are such in the Yates ranch area, however, that eventually competitive development will result. When that time comes it would not be found surprising should the Yates ranch set a high mark of daily average production that will stand for a long time before being duplicated by other west Texas fields. The Mid-Kansas & Transcontinental partnership controls an extensive block surrounding all the actually proved ground in the field; but possibly 50 per cent of the acreage finally to be proved productive may be held by other interests, structural data indicate.

An interesting experiment in oil field control is now under way on the Hendricks ranch, south of Kermit, in Winkler county, where Westbrook et al sold the discovery well and considerable acreage last year to the Southern Crude Oil Purchasing Co., arm of the Pan American group.

THE four sections that come together at the discovery well corner are split between a half dozen operators, no one of which owns more than 160 acres in one piece. The discovery well is on a strip with direct offsets of Independent Oil & Gas Co. and Pure Oil Co., on the west and east, respectively. Southern Crude has an offset of its own in the section to the south and the Gulf Production Co., in March, drilled the first big well in the field as a diagonal offset to the southeast of the discovery.

Gulf's big well, which made 4400 barrels, initial production, created a sensation in comparison with the discovery completion. The last mentioned had been good for only 130 barrels at first, but on deepening after the Gulf had

Who put the OH! in Mexic-OH?

HISTORY doesn't record that interesting fact, but we suspect it was the man who discovered that the United States had more use for the oil in Mexico than the Mexicans had. And there has been a lot of "Oh-ing" down there ever since. This makes it hard for the oil men south of the Rio Grande. It's very annoying to have fellows armed to the teeth snooping around the place, taking pot shots at you once in a while. Tough on production, too.

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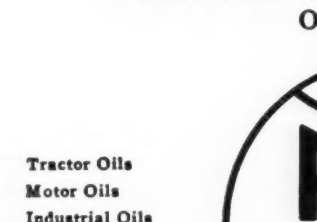

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made its completion the production was increased to about 400 barrels daily.

The Gulf well has been pinched down to about 1000 barrels daily and it is proposed to handle the four wells at the discovery intersection so that the amount of oil taken from each will be equalized; then it is proposed to keep them on a production parity until such time as it is no longer necessary to hold back yields.

Drilling will be continued in the field, but operators propose to shut down on top of the pay and not complete wells until industrial conditions are more favorable. It's "just going to be too bad," however, if some operating interest "kicks over the traces," or "the tail hold slips," because the lime pay horizon found in Winkler county shows the greatest porosity of any in the west Texas salt basin; and highly competitive development conceivably might carry daily average yields to twice the level set up in the accompanying minimum estimates.

Texas production at its November peak was less than 75,000 barrels greater than the previous maximum reached at the time of Powell development; and currently its part in general crude congestion is reduced about 40,000 barrels from the high mark, partly through control in the areas herein discussed.

Its restraint in holding back the excess herein pictured is, however, the real contribution of Texas in offsetting the additional over-production that would be certain with a different background.

Boggy Creek Well Drops To 90 Barrels Daily

Staff Special

HOUSTON, May 5.—Humble Oil & Refining Co.'s discovery well of the Boggy Creek salt dome, on the Anderson-Cherokee county boundary, in East Texas, produced at the rate of 90 barrels daily when opened up early in the week for a test. The oil showed a trace of salt water, but not enough to take it out of the classification of pipeline crude.

The Boggy Creek discovery, on Elliott & Clark land, which was described in detail on page 53 of the March 30, 1927 issue of NATIONAL PETROLEUM NEWS, had been kept shut in most of the time since completion for pinched down maximum production of about 3000 barrels daily. It was completed March 21 in the Woodbine sand at 3849 feet on the flank of a submerged salt dome, constituting the first commercial production on a saline plug of interior Coastal plain classification and the first Woodbine oil found under similar conditions.

The well's present small flow is generally attributed to conditions surrounding its shut-in.

SALINA, KANS.—Keeton Oil Co. is building a bulk and service station at Baxter Springs, a bulk station at Caney and one at Brookville, all in Kansas, according to L. E. Keeton, president.

Careful Gauging and Inspection Minimize Casing Troubles

By A. F. Hinton

N. P. N. Staff Writer

TULSA, May 7.

CARE in inspection and handling of casing in drilling wells has been found by many companies to pay big returns in preventing fishing jobs by seeing that defective joints are not run into the hole. The average casing-crew will run into the hole any pipe furnished it, as their sole idea usually is to get the pipe in and finish the job.

One defective joint or "jimmed" thread may mean a loss of thousands of dollars on account of dropped pipe, time lost, and possibly junking of the well.

In a field like Seminole, where one company will be drilling a large number of wells at once, it is practically impossible to inspect every joint of pipe that is run into the hole, as it would require a large number of experienced and trustworthy men. It is usually the case in a big developing field that men of this calibre are hard to find and companies are forced during the rush period to take what men they can get in the emergency. However, the problem of inspecting casing is not so serious in a rush field, for the reason that most of the pipe, and all of the long strings, will be new and therefore much less likely to be defective than used casing.

In older fields, or in territory where more leisurely drilling is done, such as drilling up of inside locations on large properties, re-conditioned casing generally is used. This casing, after being removed from a well, goes through a re-conditioning process at some warehouse or shop situated convenient to the scene of operations, after which it is again placed in circulation as usable pipe. It is this class of material which should be looked over carefully before being run in a well, even though it has been closely inspected at the shop where it was put back into shape.

As one instance of a company that carefully inspects casing, Barnsdall Oil Co. has men whose duty it is to see that defective joints or bad threads are caught before an attempt is made to run them in the well. Although this has been the company's practice for many years, and is rigidly adhered to where conditions permit, it has not been able to give its customary close inspection at Seminole. All of its wells in that district, however, have been drilled with new seamless casing and no pipe trouble has been experienced.

BARNSDALL maintains an extensive pipe-conditioning shop at its warehouse in Barnsdall, Okla. Casing used in wells and removed is picked up by trucks and hauled to Barnsdall, sometimes special trips being made for it, but usually when trucks are sent into the district with other loads. At the shop the casing is cleaned, straightened, re-threaded, weighed and painted and generally put into first-class condition. If not susceptible of being made usable as casing again, it is used as line pipe, or, if not fit for this use, is classified as junk.

After a joint of casing has been put in shape to be used again, it is weighed and measured for length before being stacked. By referring to a set of tables always at hand, men at the shop can identify the pipe as to its weight per foot. For instance, if it is 8¼-inch casing, the joint is 18 feet 3 inches long and weighs 584 pounds. reference to the table shows that it is 32-pound pipe. It is then marked in white paint with size, weight per foot and length, and is plainly marked with steel die "B O Co." It is then stacked, ready for use, and, having been closely inspected while going through the re-conditioning process, very few bad joints go out into the field.

In spite of the care taken in this process, the pipe is again inspected before being used in a well. When casing is placed at a well for use, a toolpusher, who is equipped with a try-gauge, follows it up and runs gauges on all the threads while it is still on the skids. He also looks it over for imperfections, both inside and outside. After washing the threads with gasoline, he gauges them on each end of each joint, and defective threads are thrown out. He then dopes the threads with the zinc-laden grease recommended by the National Tube Co., measures each joint with a steel tape, and with a steel die cuts a number in each joint. The company keeps Pratt & Whitney master gauges at the Barnsdall shop, and the field gauges are made from them. They are brought into the shop from time to time and tested for accuracy.

THE casing is run into well with die-marked numbers running consecutively; that is, joint No. 1 is the first one into the hole, then No. 2, and so on. Having each joint numbered and having a tally showing length of each joint, there can be no doubt when all pipe is out of the hole, and in case of parted pipe, it can be told exactly how many joints and how many feet of pipe remain in the hole.

Through this careful handling and double inspection, the company has reduced its casing trouble to a minimum. R. F. Mac Arthur, in charge of production for Barnsdall, states that he believes a great many instances of bad casing jobs could be prevented by attention to such details.

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The Editors' Viewpoint

National Petroleum News

Shipping Point is Guide, As Well As Price

By Warren C. Platt, Editor

MANY oil men are still confusing the bases of refinery prices. Group 3 may be a convenient basis to quote prices on all over the vast central west, but that does not mean that every price on that basis is the price at which petroleum is actually sold from Group 3 refineries. The industry can use this basis nationally, but it cannot make the prices of Group 3 refiners national unless those refiners want them that way and generally they don't.

The Group 3 price basis is being used today not only by refiners in Group 3, (which is the state of Oklahoma only) but by the refiners in many other freight groups, including frequently the refiners of Kansas, north Texas, Louisiana, Arkansas, at Wood River, Ill., in Kentucky and even in northern Illinois and Ohio. It is an easy and natural way to make a comparison, but it has led to much confusion because all these alleged Group 3 prices have been compared with the record of sales in Group 3 proper and many times found to be lower, and sometimes higher.

Each refining group makes its own prices, depending on how badly it wants the business. The farther away a refining group is willing to sell—that is the more miles it will have to ship its product—the lower will be its F.O.B. refinery price. Each refining group has certain natural marketing territory, territory to which the freight rate is less than from other refining groups, and each group, therefore, is entitled to that freight advantage and should take it. Other refining groups may invade this territory, but the farther they come, the less the net back to them and they may even come far enough to lose all profit.

There are times when refiners in Group 3 will fight for business in other than their natural territory, or at the border of their territory. Then there are times when those refiners prefer to let other refiners have the business rather than meet their price. Right here is where the variation comes between the prices of actual Group 3 refiners and prices which other refiners have made on a Group 3 basis. The real Group 3 refiners have preferred to stay out of "foreign" territory, so to speak, rather than meet the lower prices of the refiners who might be more advantageously situated to that territory.

This price basis problem might be simpler if the natural territories were sharply marked but they are not, nor are the policies of the refiners in a group always the same. Some Group 3 refiners, at times the past few months have made some gasoline sales in Ohio for instance. When they did the Group 3 price of those refiners in that Group was lower than when sales were made nearer home. Where and at what price the Group 3 refiners want to sell at is their affair. Because other refiners in other groups may sell under them and quote on a Group 3 basis is no reason why a price reporting authority, such as this paper, should arbitrarily mark down the price of the Group 3 refiners. That would be falsifying the record.

The jobber can find the record of these other sales in the price reports F.O.B. each group of refiners. The lower price to the jobber is shown there just as clearly as if it were given on a Group 3 basis, if he adds the freight rate.

This same confusion of price bases has obtained on some other products recently. Some gasoline from outside the Pennsylvania refining district has been sold on a Pennsylvania price basis; some wax from outside that same district has also been sold on the western Pennsylvania price basis and in both cases the western Pennsylvania refiners frequently have refused to meet those lower prices. Also considerable gasoline has been sold of late on an Atlantic seaboard price basis that never saw the Atlantic seaboard and at a price which was not met by refiners and companies having large storage there. However, these prices have always appeared in the reports of sales from the group making the sales but on a basis of F.O.B. that group—not F.O.B. some other group.

NATIONAL PETROLEUM NEWS and *The Oilgram* are steadily improving their service of recording prices at which sales are made. They have a considerable force of men who do nothing but gather price information every day. The territory covered by these sales is also being increased. At the present time plans are being worked out with the various refining groups in the Mid-Continent field to get an absolute record each day from every refiner of every car sold and exactly at what price. When this system has been worked out and is running smoothly the information will be given the industry as supplementing the statistical information which NATIONAL PETROLEUM NEWS now supplies. The regular service, of course, will be maintained.

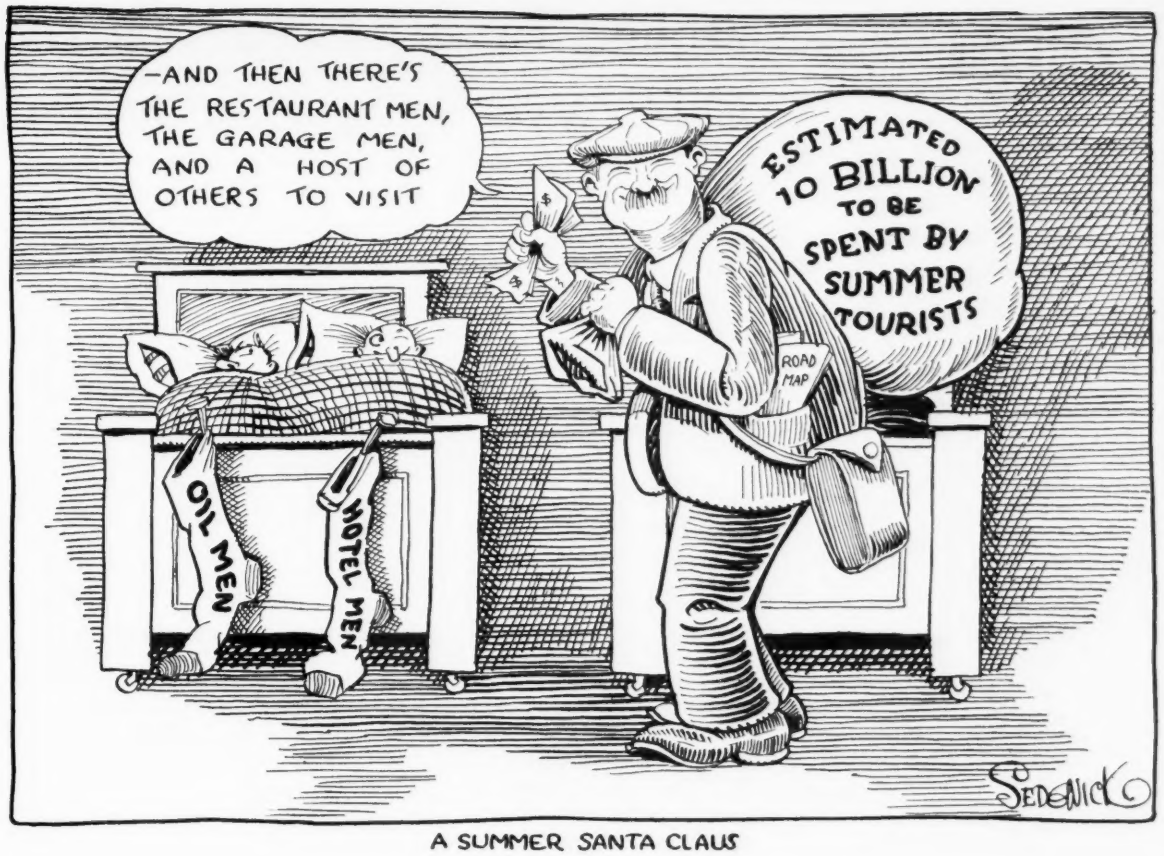
But no system of gathering records of sales will obviate the necessity of the industry keeping clearly in mind that a price basis may be used by several groups of refiners at the same time and yet each group may have a distinctly different price when it is figured F.O.B. each group.

In comparing prices either of sales records or of quotations, oil men will benefit themselves by ascertaining first just where the goods will be shipped from. Then the comparison can be made either on a delivered basis at the destination the buyer is interested in, or against the price recorded F.O.B. the refining group to which the refiner shipping belongs.

Boosting Gas Tax Encourages Railroads

ONE of the best arguments we've heard against a tax on gasoline, regardless of its purpose, is its tendency to demonstrate to the railroads, the Interstate Commerce Commission and other rate making bodies, the idea that price, at least within limits, seemingly has no effect upon the sale of gasoline.

This thought was advanced casually the other day in private conversation by a student of the oil industry, so we can't give him credit for it, but it bears considerable weight.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Railroad freight rates are not based upon any absolute method of figuring. They are all relative to each other and relative to making the roads pay a profit. It is immaterial to the roads what class of freight bears the most of the burden. The railroads realize and have admitted, for the most part, that rates are based primarily upon what the traffic will bear, at the same time keeping in mind getting a large enough volume of traffic to keep down the cost per ton per mile.

Commodities, carrying a high relative price to the public and on which a high freight rate is but an infinitesimal part of the price, bear higher rates than commodities of small retail sales price. For illustration, diamonds pay a much higher rate than sand or coal. While many people have advocated that rates should be on a cost plus basis, nevertheless, any student of rate making appreciates that railroads and rates have grown up around, with and by reason of the industries of the country and how they are located. Those industries have not all been located at the most advantageous points economically. There may have been sound economic reasons in the beginning for locating some of the industries where they are but time, and the growth of the country, have changed that in many cases. However, the railroads have appreciated that once an industry is located in a certain center, it is asking a great deal of the public to bear the cost of moving it. Therefore, it has been kept in mind that rates should protect, to an extent, the present location of industries.

The oil industry has long contended that lower rates would greatly increase the tonnage on the rails, and while this argument may have had some effect on oil rate making, it has not had the effect that the oil industry wanted.

The above mentioned student of the oil industry and of freight rates, points out that if it should be demonstrated to the railroads that 2 or 3 or 5 or 8 cents a gallon, more or less, on the price of gasoline will not restrict its purchase and use by the public, that would be an excellent argument for the railroads and these rate making bodies to carry out still further their policy of putting the rate at the highest point the traffic will stand. Obviously, if 2 or 3 or 5-cent tax on gasoline does not restrict its use by the public, the oil industry cannot argue that a tax of a fraction of a cent a gallon made by an increase in railroad rates would restrict its use.

This student fears that while rate advances may not be made in such a way as to discriminate any more between refining territories, nevertheless, the whole fabric of oil rates may be raised.

While the oil industry may not be able to argue successfully that a cent or two more or less in the price of gasoline will restrict its use, nevertheless, the oil industry can argue most successfully that an increase in the railroad rates of the country will force more petroleum products off the rails and onto other means of transportation. This point has already been demonstrated and we believe proved conclusively in various arguments, not only before rate making bodies, but before executives of railroads.

If the railroads would make lower rates they could, in the opinion of practically all oil men, attract more traffic to their rails, which would mean more profit to the railroads, and at the same time mean, in the long run, more efficient distribution of petroleum products. Whatever will benefit the public in the long run is what all business strives for.

—W. C. P.

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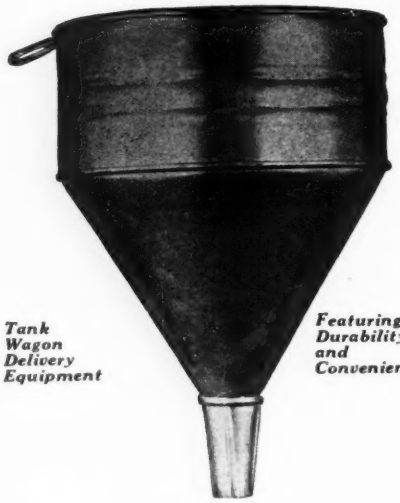

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Gasoline Taxes Exceed War Levies, Oil Lawyer Tells Ohio Governor

Staff Special

CLEVELAND, May 6.

AUTOMOBILE drivers of the United States are paying a tax on their motor fuel greatly in excess of the average luxury tax levied by the federal government to meet the emergencies of the war, Hubert B. Fuller of Chamberlin, Marty & Fuller, Cleveland, brought out in a letter to Gov. A. Vic Donahey of Ohio, asking him to veto the proposed increase of 1 cent in the Ohio gasoline tax. Mr. Fuller is counsel for several large Independent oil companies in this state.

The present tax on gasoline in Ohio is 2 cents a gallon, or approximately 11 per cent on the retail price of motor fuel, Mr. Fuller wrote. The 3-cent tax would mean a levy of approximately 16 per cent, he pointed out in his plea against further burdening automobile drivers.

In Rhode Island where the gasoline tax is 1 cent a gallon it is about the same as the average sales tax on luxuries levied to defray war expenses. In states where the tax is 5 cents it exceeds 25 per cent of the retail price of motor fuel—at Louisville, Ky., it is 29.4 per cent of the retail price, or nearly six times the war sales tax which the federal government has long since reduced.

Mr. Fuller wrote in part:

"Two years ago when the present 2-cent gasoline tax law was before the General Assembly its advocates stated that all they expected to raise was $8,000,000 per year and that the only purpose of the tax was to maintain and repair highways, and that they did not expect to ask any increase in the tax in the near future. The oil companies then insisted that the 2-cent tax would raise at least $12,000,000 a year, and that if it were adopted its advocates would promptly come before the Assembly and urge an increase in the amount of the tax and would also use the revenue for purposes other than road maintenance and repairs.

"The present gasoline tax of 2 cents a gallon last year produced $13,250,000, or nearly 70 per cent more than its advocates stated that they expected to raise. Yet in spite of this they now seek to increase this tax 50 per cent and impose upon the automobile drivers of Ohio an annual tax of $21,000,000. Automobile owners in Ohio now pay four taxes:—(1) federal excise tax, (2) license tax, (3) personal property tax on the cars and (4) gasoline tax. No estimate of the amount of the federal excise tax paid by Ohio automobile owners has been made. In license taxes they pay $9,000,000 a year, in personal property taxes the best estimate is $12,000,000 a year, in the 2-cent gasoline tax they already pay $13,250,000 a year. Under these three taxes the automobile drivers of Ohio pay yearly over $34,000,000. After allowing for the decrease in the license tax the new bill would increase this at least $2,500,000 annually.

"THE present tax of 2 cents a gallon is 11 per cent of the retail price of gasoline. The present tax per gallon exceeds the net profit made by oil companies in handling gasoline. The proposed tax of 3 cents per gallon would constitute 16 per cent of the retail selling price. The excise taxes levied by the Federal Government to meet the critical emergencies of war averaged only 5 per cent on the selling price of the articles taxed. Yet they propose to tax the automobile drivers of Ohio 16 per cent on the fuel used in running their cars.

"The gasoline tax is manifestly a poor man's tax. This is shown by the fact that approximately 75 per cent of all automobiles are mortgaged. And also by the fact that a very large percentage of cars are Fords, and by the further fact that the average sale per car at gasoline filling stations is only 4.4 gallons.

On the present automobile registration in Ohio the 2 cent tax constitutes an average tax of $9.00 on each automobile owner in this state. They now propose to increase this annual tax to $13.50 for each automobile owner. The total amount collected in the United States in 1926 from gasoline taxes in the various states of this country was $187,600,000. California with 1,614,479 automobiles, its wealthy visitors and all year touring, paid last year a gas tax of $16,502,000, the largest of any state in the Union. Ohio with 1,507,500 cars paid a tax of $13,257,265,—next to California the largest amount paid in any state in the Union by $2,000,000. You are asked to increase this gas tax 50 per cent and by gas tax alone impose on automobile drivers in Ohio this next year a tax of $21,000,000, or $5,000,000 more than the gasoline tax paid by the automobile owners of any other state in the Union. And this in addition to the other three taxes imposed on Ohio automobile owners.

"In our opinion the people of Ohio are surfeited with taxes. They urge that no new burdens or increased taxes be imposed upon them. For these reasons we strongly urge you to veto the increased gasoline tax."

SALINA, KAN.—The Joyhawk Oil Co., which is building a lubricating oil plant here, has been organized by R. L. Kent, of the Kent Oil Co., Norton, Kan., Roy Gowey, Service Oil Co., Colby, Kans. and L. E. Keeton, Keeton Oil Co., Salina.

Wells Output Can be Increased by Proper Cleaning Out Methods

By Lester C. Uren
Professor of Petroleum Engineering, University of California

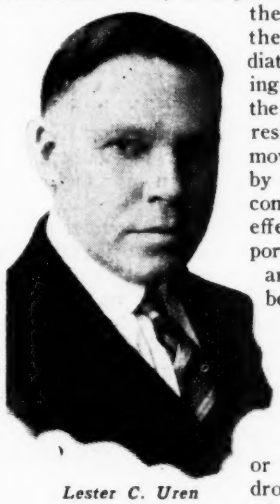
Part 1

THE effect on a well's production of accumulations of sand, paraffin, precipitated salt and so on within the walls of the well is now recognized as of great importance, and considerable study has been made of this subject by various authorities the past few years.

With the thoroughness which has characterized the series of articles he is writing for NATIONAL PETROLEUM NEWS exclusively on new production methods, Uren takes up this matter of well accumulations and methods of removing them in two articles in his series, of which this is the first.

This first article shows the nature and causes of such accumulations, and the extent to which, in many fields, they impede the production of the well. The second will take up methods for combating and removing these well accumulations.

IN earlier articles in this series,[1] it has been shown that the greater part of the energy consumed in moving petroleum from the reservoir rock into wells, is expended in forcing the oil through the sands immediately surrounding the walls of the wells. The resistance to oil movement offered by wall rocks becomes still more effective if the pores of the sand are permitted to become clogged with fine particles of "float" sand, with precipitated mineral matter, or with solid hydrocarbons which may be formed by chilling, evaporation or oxidation of the oil.



Lester C. Uren

The detrimental effect of these substances is not confined to the walls of the well, for by continued accumulation within the well, or within the casing or tubing through which the oil is discharged, they may greatly increase the energy necessary to force oil into the free space within the well and to the surface. The efficiency of oil recovery and the ultimate extraction that may be realized from an oil deposit by operation of the expulsive forces, is dependent to an important degree upon the extent to which the accumulations of sand and solid hydrocarbons in the wells and wall rocks can be removed or prevented. This article will explain the nature and manner of formation of these accumulations. The succeeding article in the series will review the methods that have been used or proposed for removing them.

Causes of Sand Accumulation

THE productive reservoir sands are occasionally unconsolidated, or almost devoid of secondary cementing material, so that the entire sand body is free to cave or flow into the wells with the oil. More frequently, the oil-bearing strata are not thoroughly cemented so that they are partially disintegrated by the oil and gas flowing through them. In many cases, though the rock structure is sufficiently rigid to maintain its original form, small particles of sand become detached from the main mass by the erosional effect of the flowing oil and gas, and will be carried by the oil through the pores of the coarser grains into the wells. Sand particles so detached from the reservoir rock, will tend to accumulate in the wells, and unless removed by the equipment employed in lifting the oil, may in time, greatly impede the flow of oil.

An oil-bearing sand stratum never yields its full quota of petroleum when compelled to produce through a body of accumulated sand which may partially or even completely fill the space within the well where it passes through the productive formation. If, for example, an oil sand 50 feet thick is penetrated by a well, which later becomes filled with detrital material to a depth of 25-feet above bottom (or 25-feet below the top of the sand), it cannot be expected that the well will produce as much oil as it would if the entire 50 feet of sand were exposed to free drainage at the wall of an open well. In fact, if the accumulated sand were compacted to the same porosity as that of the reservoir rock, the well would produce no more than it would if it had originally been drilled to a depth of only 25-feet below the top of the productive stratum.

Slichter[2] has shown that a well which penetrates only a part of the productive stratum, produces to some extent from the entire thickness of the bed, but considerably less than if the well penetrated the full thickness. In the circumstances assumed above, in which only 25-feet of a 50-foot bed is exposed to direct drainage through the walls of the well, according to Slichter's formulae, the well will produce only 55% as much oil as if it were open to the full depth of the sand. Obviously, it is to the advantage of the oil producer to drill his wells through the full thickness of the productive formation, and to keep them free of detrital material during their productive life.

OFTEN the productive formation consists of a series of alternating beds of shale and sand, the shale members being practically impervious to oil movement. If the sand strata are unconsolidated, they will be disintegrated in the vicinity of the wells where flow velocities are highest, the sand grains being swept by the flowing gas and oil into the wells. Voids so formed in the productive sands may permit the interstratified shale beds to cave against the screen pipe or perforated "oil string," effectively sealing off the well from the oil-yielding strata.[3] Figure 1 illustrates this conception.

Often wells are equipped with screen pipe having apertures small enough to restrain the coarser sand, but large enough to permit of the finer "float" sand passing through. If the screens are not cut out by the flowing sand-laden oil, the sands immediately about the well are soon drained of their finer-grained loose material, leaving a bed of relatively coarse-grained sand resting against the screen pipe. The coarse-grained sands thus excluded from the well, bridge on each other, their relatively large pore spaces offering less resistance to the flow of oil than the original sand. (See Figure 2).

The carrying capacity of the flowing oil increases with its velocity, consequently near the walls of the well, where the flow velocity is relatively high, the

[1] See NATIONAL PETROLEUM NEWS, issues of February 9 and April 27, 1927.

[2] Slichter, C. S., "Theoretical Investigation of the Motion of Ground Waters," 19th. Annual Report, U. S. Geological Survey, Part II, pages 358-367.

[3] Suman, J. R., "The Sanding of Wells," Transactions, American Ins. of Mining and Metall. Engrs., See volume entitled Petroleum Development and Technology in 1925," pages 196-198.

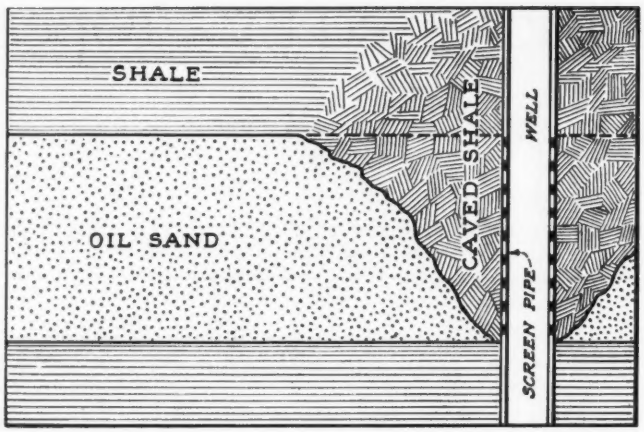


Fig. 1—Sketch illustrating isolation of an oil-sand from a well as a result of caving of over-lying shale induced by extraction of sand

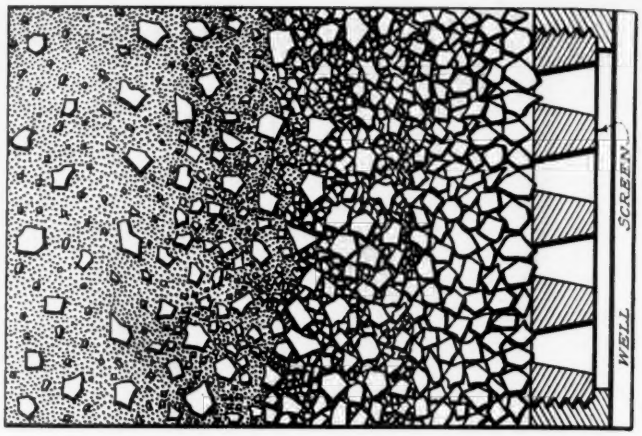


Fig. 2—Sketch illustrating formation of a body of coarse sand particles against a well screen as a result of extraction of finer sand in the vicinity of a well

reservoir rock is swept comparatively free of fine material, while further back in the sand, as the flow velocity diminishes, the interstices of the coarse-grained sands will be left clogged with finer material. It will be seen that this natural tendency toward the formation of a body of residual, coarse-grained and relatively porous sand about the wells is a very desirable condition that should be fostered by all available means. Reduction of pore resistance in the high-velocity zone immediately about the well, will permit of oil and gas entering the well with materially lower pressure loss. Energy thus conserved will result in greater ultimate recovery and a greater effective drainage radius.

IN the previous article of this series,[4] a proposed method of forming gravel-filled cavities about wells was described. Such a gravel screen about a well within the productive sand, if formed of pebbles of proper size, will possess superior advantages than the naturally-formed coarse-sand screen, in that it will offer less resistance to the flow of oil. For many years it has been the custom of water-well drillers to dump gravel into the space between the well casings and the walls of their wells, with the purpose of forming sand screens. Greater freedom from sand incursion and a larger and better-sustained production are recognized advantages of the gravel screen in water-well drillings; but our oil producers seem to have over-looked the possibilities of this simple device.

Mr. A. B. Thompson,[5] in discussing the writer's proposed method of forming gravel-filled cavities about oil wells, subscribes to the theory that increased drainage area within the well will increase recovery, and describes natural occurrences in the Roumanian oil fields in which wells have developed rubble-filled cavities about them. The wells produce from a reservoir rock that is made up of boulders, gravel and sand, and extraction of the sand by permitting it to flow into the wells with the gas and oil, has left masses of gravel and boulders about the wells through which the oil flows with comparative freedom. It is said that in later wells drilled as far as a hundred feet away from some of the larger gushers, the reservoir rock has been found to consist of rubble masses almost devoid of sand. Some of the most prolific of the Roumanian wells have displayed evidence of this condition within the productive strata.

IN selecting material for the formation of a gravel screen, it is apparent that it will be important to use rock particles of proper size, so that, when placed, they will form pore spaces smaller in cross-section than the sand to be excluded is able to penetrate. Laboratory tests[6] have indicated that sand grains will bridge openings in screens (i.e., will not pass through the screen apertures to an appreciable extent) providing the screen openings are less than twice the diameter of the sand grains.

This means that the minimum diameter of the gravel pores may be as much as twice the diameter of the sand grains and the screening action of the gravel mass will still be effective. Suppose, for example, that it is desired to select a size of gravel that would be effective in excluding 35-mesh sand having a diameter of 0.417-mm. If the gravel particles were true spheres, their pore spaces when packed in the condition of maximum density, could be as great as 0.83 mm. Spheres forming pore spaces of this size would be about six times as large, or 5-mm. in diameter.[7] That is, for the exclusion of 35-mesh sand, the gravel particles could be as large as 5-mm. or about one-fifth of an inch in diameter. Such a gravel would offer very little resistance to the passage of oil through it.

IF sand particles are moving with the oil and gas toward a well, it is important that such sand be permitted to enter the well, otherwise it will accumulate in and eventually clog the pore spaces of the reservoir rock about the well. The use of screen pipe and liners to prevent unconsolidated sand from caving into a well is, of course, necessary; but when an effort is made to screen out the finer "float" sands that naturally move toward the well with the oil through the coarser-grained material comprising the main body of the reservoir rock, we encourage the formation of an impervious barrier of closely packed material which greatly impedes and may, in time, completely prevent flow of oil into the well.

Some authorities believe that it is a mistake to curb the influx of sand in any degree, and that a higher ultimate oil recovery is secured by encouraging rather than restricting sand movement. This theory was first given expression by Kobbe,[8] who based his belief on the results obtained in certain California fields where unconsolidated sands have been particularly toublesome. (See Figures 3 and 4.) More recently, Suman[3] has given support to the theory, based on both Mid-Continent and California practice. In the Roumanian fields, according to Thompson,[5] it is a recognized principle that the movement of sand into the well with the oil must not be restrained, especially during the early life of the wells when the gas pressure is high.

IT is logical to expect that the extraction of material which otherwise restricts production, will lead to greater ultimate recovery. Removal of the sands immediately about the well tends toward the formation of well cavities, and this too, as we have seen,[4] is beneficial in stimulating oil recovery. There is danger however, in carrying such a policy too far, for unless the walls of the cavity can be supported in some way (possibly by the introduction of gravel at a certain stage), extensive caving may result, leading perhaps in time, to caving of the cap rock and consequent admission of water from over-

[4]See NATIONAL PETROLEUM NEWS, issue of April 26, 1927.

[5]Thompson, A. B., Discussion of paper entitled "Increasing Production of Petroleum by Increasing Diameter of Wells," by L. C. Uren, Transactions, Am. Inst. Mining & Met. Engrs., Vol. LXXI, (1925), pp. 1296-99.

[6]Graser, F. A., "The Screening Effect of Slot Openings on Unconsolidated Sands," a thesis performed under the supervision of the writer, University of California, 1924.

[7]See a previous article of this series, printed in the January 19, 1927 issue of NATIONAL PETROLEUM NEWS.

[8]Kobbe, W. H., "Problems Connected with the Recovery of Oil from Unconsolidated Sands," Transactions, American Institute of Mining Engrs., Vol. 56 (1917), pp. 799-830.

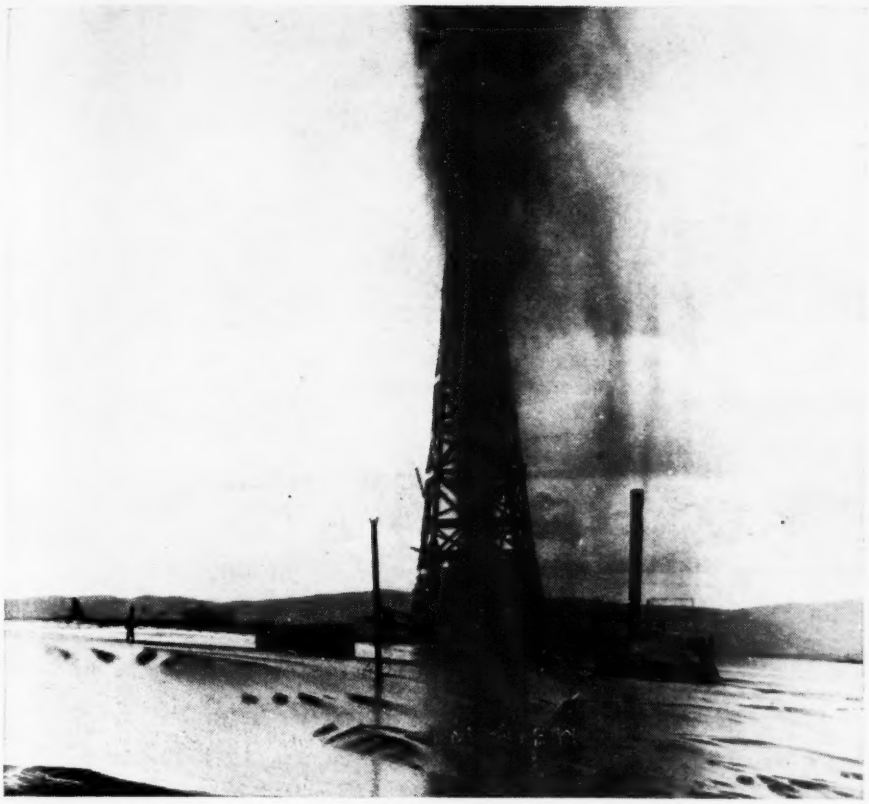


Fig. 3—A famous California gusher, the Lakeview No. 1 in the Sunset Field, showing rig and boiler partially buried in sand ejected from the well with the oil. (Photo by Myrt's Studio, Taft, California)

lying formations. Crooked and collapsed liners, so badly bent and deformed that they can scarcely be withdrawn from the wells, offer additional evidence of the danger attending the formation of extensive unsupported cavities. In many cases, the lower portions of wells must be completely redrilled and equipped as a result of caving of the productive formation against the liners.

Causes of Inorganic Precipitate Accumulations

SEVERAL secondary minerals, common in nature, are readily formed by the chemical interaction of dissolved substances in oil-field ground waters. For example, amorphous silica is readily precipitated from alkaline solutions by carbon dioxide or by organic acids present in petroleum. Insoluble calcium sulfate (gypsum) is formed when a ground water containing a high concentration of calcium chloride in solution is mixed with another containing soluble sulfates. When water containing a soluble calcium salt is brought into contact with another containing carbonate, lime in one or another of its various forms is precipitated. Iron salts in acid or neutral solutions, are precipitated as hydroxide if the solution becomes alkaline. Barium chloride in solution in ground water, on contact with a soluble sulfate, will form insoluble barium sulfate (barite).

Either of these mineral substances, as well as a variety of others, is readily formed under appropriate conditions in oil wells. When precipitated in finely divided form, these substances may be deposited as coatings on the sand grains, eventually extending across and closing the sand pores or, they may first be deposited as a mineral sludge, the particles of which later consolidate to form cementing material between the sand grains. No more effective means of excluding oil and gas from the wells could be conceived of, and their formation should be prevented by all practical means.

Solid mineral substances may also be formed from ground waters associated with petroleum by a process of concentration. Evaporation of water in a well by natural gas bubbling through it will increase the concentration of dissolved salts until the residual solution becomes saturated, after which further evaporation will result in a part of the dissolved salt crystallizing out. Mills and Wells[9] describe occurrences in which the tubings of gas wells have become filled with crystallized mineral salts for depths of hundreds of feet, in some instances within but a few months time.

Causes of Solid Hydrocarbon Accumulations

IN the production of certain types of oils, recovery is impeded by the formation of waxy residues which tend to clog the pores of the rocks, the casing perforations or screens, and the tubing through which the oil flows or is pumped to the surface. This material, commonly referred to as "paraffin,"

[9]Mills, R. Van A., and Wells, R. C., "The Evaporation and Concentration of Waters Associated with Petroleum and Natural Gas," U. S. Geological Survey Bull, 693., (1919).

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varies in consistency from that of vaseline to that of the hard natural wax ozokerite. Studies by Mills[10] show that its melting point is generally somewhat higher than that of commercial paraffin, and it is ordinarily less soluble in the usual solvents for hydrocarbon products. It is often contaminated with more or less water, oil and inorganic silt, sometimes in emulsified form. The inorganic material may consist of either fine sand, clay, shale or precipitated inorganic salts.

The causes responsible for the formation of paraffin in wells have also been outlined by Mills.[10] The chilling effect on the oil as a result of the rapid expansion of the associated gas in the immediate vicinity of the well, is thought to be a common cause of paraffin deposition. Wax separates from some crudes at temperatures but little below the normal temperature of the reservoir rock. Bennett and Sclater[11] report that the Texas Panhandle oil has a normal temperature in the reservoir rock of 85° F. and that it congeals at 60° F. Reduction in pressure also reduces the solubility of the solid hydrocarbons in the liquid forms, and rapid loss in pressure as the oil approaches the well, will cause wax deposition.

IF water is present with the oil in the productive sand, or in the well, conditions which tend to cause emulsification will promote wax deposition and accumulation. Suspended particles of inorganic silt apparently serve as nuclei about which the oil and water emulsify to form waxy deposits. These silts are often composed of precipitated minerals derived from salts dissolved in the waters associated with the oil.

Another common cause of paraffin deposition is that of evaporation of the lighter constituents of the oil by natural gas, leaving behind the heavier oil residues which eventually solidify to form wax. If the fluid is not maintained at a constant level in a well, the alternate wetting and drying of the walls as the fluid periodically rises and falls, will result in gradual wax accumulation. The result is comparable with that which would be obtained by repeatedly painting the walls of the well with paraffin.[10]

Deposition of wax is most serious in the older, partially depleted fields where the gas pressure is no longer sufficient to keep the pores of the productive sand open. The sands about the wells become progressively more and more impervious by deposition of wax within the pores, until the wells become practically sealed off from the productive sands. Mills[10] believes that in extreme cases the paraffin accumulations may extend through the reservoir sands

Fig. 4—Accumulation of sand pumped with the oil from a well in the Sunset Field, California

for distances of several feet from the walls of the wells.

Many references are to be found in recent petroleum technology literature, which indicate the serious and widespread difficulty resulting from paraffin deposition in producing oil wells. In the Slick oil field, Creek County, Oklahoma,[12] some wells require cleaning out every week. Difficulty is also experienced as a result of paraffin accumulation in the Cushing Field of Oklahoma.[13] George and Bunn[14] describe an occurrence in the Graham Field of Oklahoma, in which paraffin completely filled several hundred feet of tubing in a pumping well; and from another well, many hundred pounds of paraffin was extracted, the fragments in some cases being of the full diameter of the 8¼-inch casing with which the well was lined.

The oil produced in the Salt Creek Field of Wyoming,[15] due to its high wax content, becomes a waxy, semi-solid mass on reduction to moderately low temperatures. Paraffin accumulations in the well tubings are common in this field, and where the gas pressure has declined to low levels, it is also deposited in the reservoir sands about the walls of the wells. The paraffin problem is also known to be a common one in many of the Appalachian fields. In the Yenangyaung oil-field of Burma, and in the fields of Trinidad, Galicia and Roumania waxy deposits often interfere with the continued operation of wells. In certain of the Roumanian fields, according to Thompson,[16] wells are occasionally found filled to the top with accumulated paraffin.

Summary

IN the present article the nature and causes of the various types of well accumulations have been explained. It is shown that the problems of sand, paraffin and precipitated salt accumulation are of common occurrence in many fields where oil is produced, and that unless means be adopted to prevent their formation or to periodically remove them when formed, these accumulations may seriously impede the flow of oil into the well and to the surface. The methods used for combating and controlling these well accumulations will be described in the next article of this series, which will appear in an early issue of NATIONAL PETROLEUM NEWS.

[10]Mills, R. Van A., "The Paraffin Problem in Oil Wells," U. S. Bureau of Mines Reports of Investigations No. 2550, December, 1923.

[11]Bennett, E. O., and Sclater, K. C., "Some New Aspects of the Gas Lift," Transactions, American Institute of Mining & Metallurgical Engineers, New York Meeting, February, 1927.

[12]Schwarzenbek, F. X., and Ross, J. S., "Petroleum Engineering in the Slick Oil Field," U. S. Bureau of Mines and State of Oklahoma Cooperative Bulletin, 1922.

[13]Wardwell, Brandenthaler, Williams and Dall, "Water Problems in the Northern Part of the Cushing Field," U. S. Bureau of Mines and State of Oklahoma cooperative bulletin, February, 1927.

[14]George, H. C., and Bunn, J. R., "Petroleum Engineering in the Fox and Graham Oil and Gas Fields," U. S. Bureau of Mines, Office of Indian Affairs and State of Oklahoma Cooperative Bulletin, 1924.

[15]Estabrook, E. L., and Rader, C. M., "History of Production of Salt Creek Field, Wyoming," Transactions, American Institute of Mining and Metallurgical Engineers, see "Petroleum Development and Technology in 1925," pages 234-237.

[16]Thompson, A. B., "Oil-Field Exploration and Development" Vol. II, pp. 947-952. D. Van Nostrand Co., New York.

RILEY, KANS.—Marine Oil Co. here is handling Skelly gasoline and kerosene and White Eagle oils and greases. W. S. Allen, manager, reports that the spring plowing is now under way after four weeks of steady rain.

BILOXI, MISS.—Superior Oil Co. will erect a 10,000 filling station here on Howard Ave. and Main St. A lubricating and washing service department will be installed at the rear. The building has been leased by William F. Meder.

MT. PLEASANT, MICH.—Taylor Bros. opened their new filling station here on May 1. Sunoco products are handled.

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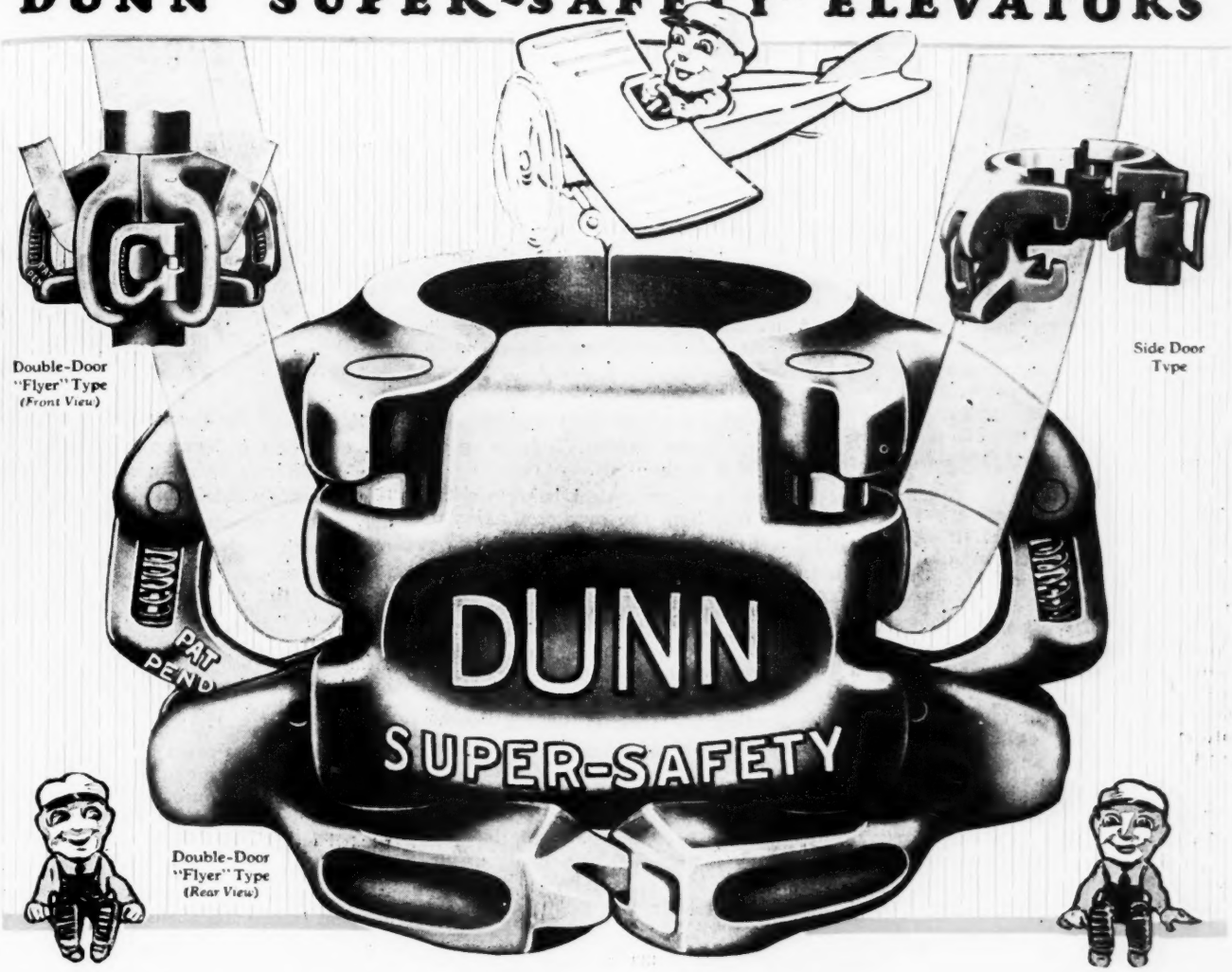

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Prompt Knowledge of Stocks on Hand Would Help Refiners to Sell Better

By E. M. Lyons
Tiona Refining Co., Clarendon, Pa.

Presented at National Petroleum Association Meeting, Cambridge Springs, Pa., April 28

DURIING the past 10 years, the improvements made in the methods of refining crude petroleum have been astounding, and in this day, when overproduction is the bane of the oil industry, it becomes more and more difficult to operate at a profit. Improvements in refining processes are necessary, in order to cut the cost of production and to make products which will carry the cost of manufacture. The industry is putting in these improvements.

The methods of accounting have been changed over the past 10 to 20 years, so that a statement put out by a modern refining company today, is on an entirely different basis from the statement of 20 years ago. Ten years ago, most refiners made up a carefully prepared statement at the end of each year. Now most companies make complete statements each month, and not only that, but they take a stock report, which is practically an inventory, every day.

The modern plant operating efficiently and with an up-to-date accounting system, under competent supervision, will give a refiner the best which can be obtained in the production of products and in the proper accounting for same. This only applies to each particular plant.

In this day and age, if a company is to be successful, its management must know more than simply that company's own business. The management must know considerable about its competitors' business; must know about the oil business of the entire country; should know oil conditions of the world; and should know about general business conditions.

Through the Bureau of Mines, monthly statistics of the oil business of the entire country are furnished. These statistics are invaluable to the industry and careful study of these reports will amply repay anyone in the oil business.

THE refining members in our association are located principally in Pennsylvania, Ohio and West Virginia. The smaller refiners have a natural sales territory within a small radius from their plants. Their logical territory is comparatively nearby to the refinery itself. The prices which can honestly be obtained for the different products of petroleum are governed by certain factors. One of these factors is the quality of the product. A product which is of better quality than a similar product made by others, will, naturally bring a better price.

Prices are also affected by the competition of other manufacturers, but without a clear conception of the stocks of materials available for distribution, the cost of delivering such products to the consuming points, and a knowledge of the delivered price by competitors, one cannot sell intelligently.

"Know your markets" is a good slogan for each of us.

There is a great deal being written nowadays about the over-production of oil. Everyone seems to know that crude oil production is at a higher rate than is necessary for the good of the industry and of the public. Our trade magazines are calling attention to the matter of over-production, and are giving us helpful information as to how to conduct our businesses while the overproduction of crude is such a serious menace.

E. W. Marland, of the Marland Refining Co. in a newspaper interview, stated that the oil industry is very sick. He believes it cannot get well, until the public and the industry itself understand that it is sick and why it is sick. Mr. Marland states:

"THE Oklahoma or Texas or California producer of oil may be a good producer of oil in his particular state and know nothing about the conditions existing in the other two states, to say nothing of poduction conditions in foreign countries. By his very zeal and ability to produce more and more oil in his particular field, without knowledge of what is going on in other fields, he aids in bringing about a condition such as the present. "Very few producers see the whole picture and still fewer keep in mind the immense stocks of oil above ground resulting from overproduction of previous years."

To paraphrase Mr. Marland's statement regarding the production of crude oil, a Pennsylvania or Ohio or West Virginia refiner may be a good refiner of oil in his particular state and know nothing about the conditions existing in the other two states, to say nothing of conditions in foreign countries. By his very zeal and ability to refine more and more oil in his particular state, without knowledge of what is going on in other states, he aids in bringing about a condition such as the present. We are all prone to give too much attention to the details of our own business, without proper consideration of what is going on about us.

If the members of this association would pool their statistics regarding the principal manufactured products, and if each member had promptly a summary of the data, it would go a long way towards promoting better selling methods.

THROUGH the Department of trade & commerce, with group chairmen located at nine different cities, price information is now readily obtainable by each member, as each group chairman is in close touch with each member of his particular group, and is always in position to advise the member of his group of price and trade conditions. The group chairmen are in position to exchange information with each other, so that members can get trade information not only regarding their own group, but of the whole organization, by application to the group chairman. When you ask a group chairman for information, please give him all the information you can, so that our group chairmen will be kept posted on all marketing conditions.

In addition to this, we have the daily and weekly reports put out by different trade publications.

The position of the wax market is particularly interesting at this time because the stocks of wax have been increasing steadily since 1924. Production is at a greater rate than consumption and, naturally, stocks have increased. Increased stocks mean lower prices, and wax is lower today than it has been in several years. Apparently, the buyers of wax have realized that large stocks of wax have been carried in this country, and by postponed buying have caused a very rapid and serious decline in the spot market price of wax.

It is about time for a reaction to set in, as wax should command a higher price than the present buyers' market.

IT is highly important that the members of our association not only study the statistics put out by the Bureau of Mines, and by others, but it would be very helpful if our members had prompt and reliable information as to statistics pertaining to this association.

The department of trade and commerce is perfectly willing to undertake a collection of statistics for its members. The complete plan contemplates a weekly report from each member on stocks, production, shipments of gasoline, kerosene, gas oil, fuel oil, viscous neutrals, steam refined cylinder

stocks, filtered cylinder stocks, bright stocks and wax. If the members will furnish the data by mail each Saturday, as of the week ending on Friday, the department of trade and commerce will tabulate such information on Monday and will mail out a recapitulation of same to each member on Monday night, so that the information will be available for each member on Tuesday.

To some of us, this may be considered a radical step. We, in the oil industry, are prone to act slowly. We frequently miss real opportunities by procrastination. Some of us probably do not have the above information, except in a general way. The information, if compiled for each plant, will be invaluable to that plant, even though that particular plant may not know that situation in other plants, but the information would be far more valuable if it were combined and a true picture of the stocks, production and shipments of our entire association was before each member.

Many of us are discouraged, because we try to attempt to do too much at one time. Benjamin Franklin, so it is said attempted only one thing at a time. Possibly a complete report of stocks, production and shipments referred to above is too much for us to undertake just now, and possibly we should proceed in the matter one step at a time. If it is your wish that we try to creep before we attempt to walk, then let us report to the department of trade and commerce once a week, simply the stocks of the various products on hand, consisting of gasoline, kerosene, gas oil, fuel oil, viscous neutrals, steam refined cylinder stocks, filtered cylinder stocks, bright stocks and wax.

If you will do this, you will receive each Tuesday, a recapitulation of the total stocks on hand for these various grades and you will know whether the stocks of our members are increasing or decreasing, and if increasing it will be natural to anticipate lower prices, but if decreasing, it will be natural to look for higher prices.

We stand ready to do the work, but in order to follow out either one of the plans successfully, it is necessary that we have the hearty co-operation of every member. No half-way measures will produce the results.

Sterling Oils Get New Distributor

OIL CITY, PA.—A new marketer has started here to distribute products of the Sterling Oil Co., Emlenton, Pa. The marketer is Egan & McMullen. A service station has just been completed and was scheduled for opening May 7.

E. W. Egan and Charles McMullen are the partners. Mr. McMullen for the past three years has been representing the Quaker State Oil Refining Co. in eastern Pennsylvania and in West Virginia.

WESSINGTON SPRINGS, S. D.—D. C. Schryer, owner of the Standard Service Station, has installed three new 10-gallon pumps at his station here, and has also added a new truck tank.

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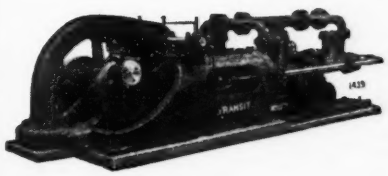

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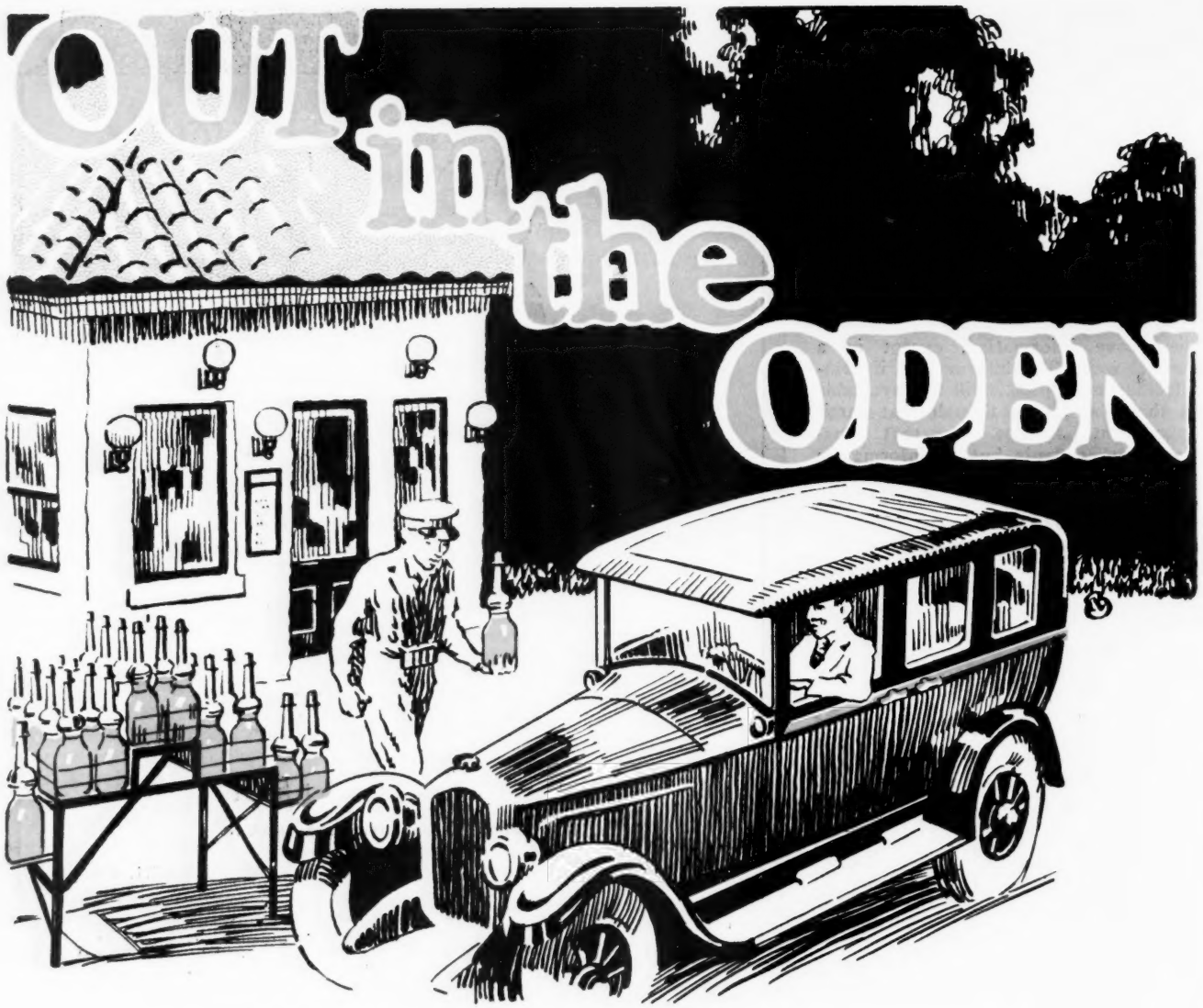

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Gasoline is Getting Better All the Time From Every Standpoint

By Dr. Gustav Egloff
Universal Oil Products Co.

Presented at N. P. A. Meeting, Cambridge Springs, Pa., April 29

THE average motor fuel of today is superior to that of the past, altho the public generally believes that motor fuel as well as other commodities has deteriorated with the years. The average motor fuel of the present is a better product in every way as to ease of starting, acceleration, volatility and anti-knock properties.

The full motor value of gasoline now being produced cannot be attained at the present time. In fact, the motor fuel now being marketed is too good for the average automobile, as its full utility cannot be used, due to the relatively low compression pressure of the present day motor car. The average pressure of combustion in motors of today is about 80 pounds compression pressure. The average motor fuel of today would function best in a 100 pound or more compression pressure motor.

The highest compression pressure motor car on the market today is the Hupmobile Eight which is taking advantage of the improved motor fuel. If we could use the higher compression motors and obtain the increased mileage of 25 per cent, we would require approximately ten billion instead of twelve billion gallons of motor fuel, thereby bringing about a saving of at least 250 million dollars a year in our motor fuel bill, during the year 1927.

The following data was taken from the government reports as to the quality of motor fuels from the year 1919 to the January survey of 1927.

Year	Initial Boiling Point	End Point
1919	126°F	423°F.
1920	123	436
1921	120	431
1922	112	430
1923	116	431
1924	102	429
1925	102	426
1926	96	422
1927 January survey	96	421

THE improvement in the quality of the average motor fuel has been primarily due to the cracking process which is producing a motor fuel of superior quality to straight run. The cracking process is producing over four billion gallons of motor fuel for the year 1927. This represents approximately 35 per cent of the total gasoline produced in the United States. In the year 1919 the yield of cracked motor fuel was approximately 17 per cent.

The natural gasoline has also improved the quality of motor fuel in that it now represents approximately 10 per cent of the total motor fuel produced and marketed in the United States. The natural gasoline has an average anti-knock value of approximately 60 per cent that of benzol and when blended with motor fuel its quality is improved in relationship to the percentage added.

The increased use of benzol as a blending agent for motor fuels has improved its quality, and only to a very minor extent in quantity. This is due to the limited output of benzol produced by coke oven plants. Benzol as motor fuel represents approximately one per cent of the total motor fuel.

The use of "dopes" in our motor fuels opens a vast vista in improving its properties. There are many charlatans in this field and one must be exceedingly careful in recommending the addition of substances to improve the quality of motor fuel. Professor J. Hunter of the University of Colorado has a museum of "dope materials." These dopes are to be added to motor fuel in order to improve its properties, particularly anti-knock, and to prevent carbon formation in the cylinders of a motor car.

HE has collected over 200 "dope" specimens. They were put up in fancy containers and labeled with inflammatory names of which the following are representative:

Cascarets	Gaspep
Castolene	Dycopep
Motorginger	Gastonic
Radimite	Electrolene
Gascene	Nulifegas
Inajiffy	Leolite
Gomor	Culco
Lesgo	Car-bon-ale

The bulk of the samples, either white or colored, showed upon analysis the familiar moth balls or naphthalene, having no special virtue as far as improving the anti-knock properties of motor fuel are concerned. A large sum of money has been expended throughout the country in an endeavor to put over "dopes" such as the above having no special merit.

However, there are so-called "dopes" which are highly effective in producing an anti-knock motor fuel by the addition of relatively small quantities. The leading members of this type of dopes are tetra-ethyl lead, iron carbonyl, colloidal sols of iron, lead etc. The aromatic amines such as aniline and para-toluidine are also quite effective in reducing the detonating properties of motor fuel. Iodine compounds are effective also in reducing the knock properties of motor fuels.

THE use of tetra-ethyl lead is quite widely distributed in the United States. It is the most effective so-called "dope" so far discovered which has worked out on a commercial scale. It is being marketed under the trade name of Ethyl gasoline.

The primary sources of motor fuel at the present time are those derived from the United States and South America. There is literally a flood of oil being produced in the United States far beyond our needs of the present time. The Seminole, Panhandle, Seal Beach and Ventura fields are profoundly disturbing the oil industry. Altho vast quantities of oil move to the eastern coast by way of pipe lines and tank steamers, a relatively large amount is also being tankered in from Colombia, Mexico and Venezuela. It may well develop, that if South American oil becomes cheap enough, that the pipe lines which are now carrying oil from the west to the eastern coast, may be utilized to pump oil from the eastern coast to at least a portion of the west.

Despite the excessive quantity of crude oil being produced and shipped into the United States, increased construction of modern pressure distillation plants continues. The cracking process is producing high anti-knock motor fuels throughout the country and particularly from crude oil such as California, Texas, Arkansas and Louisiana. The commercial cracking of heavy oil is going on in various parts of the United States. California is one of the most prolific oil producing areas, yielding approximately 650,000 barrels of crude oil per day. This crude oil could be cracked into yields of gasoline of over 50 per cent. In California cracked motor there would be an average benzol equivalent of 35 per cent or more.

THE Spindletop, Mirando and other crude oil fields of Texas would yield cracked gasoline having a benzol equivalent of 45 per cent and higher. The gasoline yield on these oils would be over 50 per cent of finished motor fuel without any recycling. The Smackover field in Arkansas produces a high grade anti-knock motor fuel having a benzol equivalent of 40 per cent and higher. The motor fuel yield commercially being obtained from the cracking of Smack-

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At Freedom, is refined the wonderful 100% Pennsylvania Crude Neutrals which are used exclusively.

At Coraopolis, is refined the exceptional 450 Bright Stock (Sharples Process) which also is used exclusively.

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Immediate deliveries can be made in tank cars, in compartment cars, barrels, or drums.

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450 Bright Stock (Sharples Process) which requires less neutral to blend to the ordinarily required specifications.

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600 Steam Refined
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FREEDOM

over crude oil is in excess of 55 per cent of the charging stock.

The cracking of Mid-Continent charging stock gives a motor fuel having a benzol equivalent as an average of 25 per cent. During the year 1927 there will be over four billion gallons of motor fuel produced by the cracking process.

The anti-knock properties of motor fuels are due to their chemical composition. All gasolines contain various percentages of paraffin, unsaturated, naphthene and aromatic hydrocarbons some being present only in traces. Of the four groups of hydrocarbons present in gasoline the aromatics are the best. Naphthene and unsaturated are the next in order in value while the paraffin are the poorest.

As a function of the percentage composition of the four groups of hydrocarbons present in gasoline it may be entirely nondetonating or may detonate to a high degree in a high compression pressure motor. The cracking of petroleum oils may be so controlled that the non-detonating hydrocarbons such as aromatic, naphthene and unsaturated, may be produced in high percentages. The cracking reaction produces a high non-detonating motor fuel which may be used as a blending agent to improve the burning properties of straight run gasoline.

THE unsaturated hydrocarbons are produced from the cracking reaction and have a tendency to burn under the pressure conditions of a high compression pressure motor relatively quietly with no tendency toward knocking. The quiet burning of unsaturated hydrocarbons is due to its chemical constitution. There are practically no unsaturated hydrocarbons present in normal straight run gasoline.

The naphthene hydrocarbons have a chemical structure which under combustion conditions prevailing in a high compression motor brings about a quiet burning with no tendency toward violent reaction. The naphthenes have non-detonating properties which increase the utility of the motor fuel. They are present in straight run gasoline derived from California, Texas and the Smackover fields. Under cracking conditions the naphthene hydrocarbons are produced in relatively high percentages so that a superior high anti-knock motor fuel is the result.

The aromatic hydrocarbons have remarkable non-detonating properties. They will operate the highest compression pressure motor which it is practical to build. They are so high in non-detonating properties that their utility lies in blending with straight-run motor fuel.

The aromatic hydrocarbons are present in straight run motor fuel derived from California, Texas, Smackover, Java, Borneo, Mexico and Venezuela. They are produced under the cracking conditions prevailing in the process in relatively high percentages.

The cracked gasoline can be blended with straight run to bring up the mixture of motor fuel suitable for serving in a high compression motor.

IT has been shown by Midgley, Boyd and Ricardo that volatile gasolines have practically the same motor efficiency when there is a non-detonating condition prevailing. The detonation value of a gasoline is the primary factor on which to judge its value for use in automotive engines. It appears to be established that the degree of detonation is a function of the speed of the burning of the gasoline. It has been well shown that a gasoline cannot burn with too low a velocity of combustion for the slower the gasoline burns the less tendency there is for detonation taking place. Experiments have indicated that the engine performance of a gasoline is a function of the per cent of paraffin, unsaturated, naphthene and aromatic hydrocarbons present in the mixture. The lower the percentage of the paraffin hydrocarbons present in gasoline of Navy specifications the less tendency there is for it to detonate in a high compression pressure motor.

In the refining of cracked motor fuel by the usual sulfuric acid method there is a distinct loss of valuable anti-knock hydrocarbons. There are no difficulties in refining cracked motor fuel to any market specification desired, but to refine cracked motor fuel to water-white color, good odor, negative to the doctor and corrosion tests, and sulfur to 0.1%, gives a high economic loss. The usual method of refining cracked motor fuel is to treat with the chemical reagents sulfuric acid, caustic soda, sodium plumbite and water. The addition of the chemicals to the gasoline in the agitator will vary in amount and their order as a function of the type of motor fuel to be treated to specifications. There are still specifications which demand a water-white motor fuel but this in my judgment is an error due to the fact that as far as an automotive cylinder is concerned the combustion of the gasoline therein has no bearing upon its color.

The treating of the cracked gasoline to drastic specifications adds to its costs in a three-fold way in that chemicals are used; the gasoline is depreciated in quality due to the loss of anti-knock compounds and there is an actual loss of gasoline due to its reaction with the acid, solubility in the acid and polymerization of some of the gasoline into high boiling gas oil-like hydrocarbons. As a matter of fact more and more motor fuel is being colored not alone red, pink, purple but also blue and green, and undoubtedly other colors will be used matching the rainbow.

DALLAS, TEX.—Pierce Petroleum Corp. has opened two service stations here recently.

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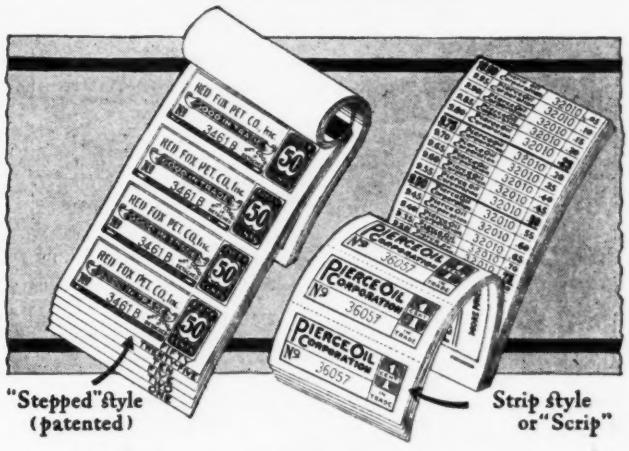

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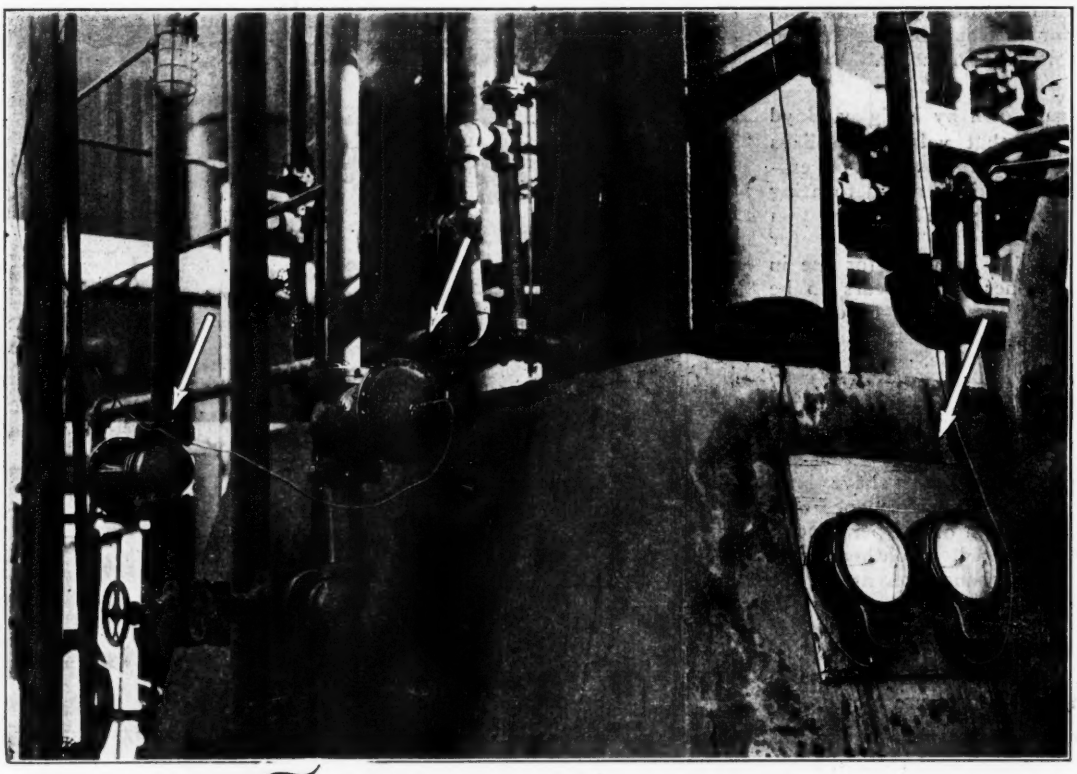
Oil Price Handbook

RECENT crude and tankwagon price changes have caused many an oil man to study prices prevailing a year ago at this time.

What was Mid-Continent crude a year ago today? Or, what was 58-60 U. S. Motor gasoline in Oklahoma? Or, the tankwagon price of gasoline a year ago? These are some of the questions you are asking yourself right now.

You can get the answers most conveniently, rapidly and accurately in the OIL PRICE HANDBOOK for 1926. It contains the refinery, tankwagon, crude prices and export markets for the entire year 1926 as published in the weekly issues of National Petroleum News. 146 pages, cloth bound, marginal index—price $5. Send for your copy *today*.

NATIONAL PETROLEUM NEWS 812 Huron Road Cleveland, Ohio



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INDICATING - RECORDING - CONTROLLING

Better Testing of Oils Will Save Refiners Money and Good Will

By A. W. Scott

Empire Oil Works, Oil City, Trustee in Charge Department Standards and Tests, N. P. A.

Presented at N. P. A. Spring Meet, Cambridge Springs, Pa., April 28-29

AT the beginning of the fiscal year 1926-1927 the department of standards and tests of the N. P. A. mapped out a program which they believed would be of considerable help to the members of the association. It was recognized that there were many members who had splendid, well equipped laboratories operated by competent chemists and producing satisfactory results. These members are to be congratulated but this should not lessen their interest in our program. In the interest of continued accuracy in their laboratories, our plan should be profitable to them.

The average small refinery laboratory usually finds it difficult to produce results which will check reasonably close with other refinery laboratories and with commercial laboratories. It is with this in mind that we have laid our plans for this year's activities.

We are gradually organizing refinery groups situated geographically so that the members can attend with as little inconvenience as possible.

We plan to have each group hold not less than four meetings during the year. At two of these meetings samples of gasoline, one a straight run and one a blended product will be given to each refinery represented, and one sent to those not represented. Complete tests are to be made and reported back to the group chairman, who, in turn, will report to the trustee-in-charge. These tests will then be bulletined by the Washington office of the association and each refinery individually notified which test belongs to it.

This same plan will be followed twice during the year by using a sample of Pennsylvania steam refined cylinder stock, but, in addition to furnishing each group member with a sample, one will also be sent to the U. S. Bureau of Standards at Washington. The results of these tests will be bulletined in the same manner as the others.

The following groups have already been organized: Oil City-Titusville, Bradford, Warren, Pittsburgh-Butler, Ohio-West Virginia and Philadelphia groups. All of these groups have held at least one group meeting of their laboratory men except the Philadelphia group which will start functioning in the near future.

Two different samples of gasoline have already been tested by the Bradford group and a still different one by the Oil City group. In the Bradford group the gasoline tests ranged as follows:

First Sample

Initial	95°	to	100°
End Point	436°	to	447°
Recovery	95½%	to	98½%

This shows a range of five points on initial, 11 points on end point and three points on recovery.

Second Sample

Initial	86°	to	88°
End Point	406°	to	417°
Recovery	95%	to	97½%

This shows a range of two points on initial, 11 points on end point and two and a half points on recovery.

In the Oil City group the gasoline tests ranged as follows:

Initial	102°	to	115°
End Point	418°	to	430°
Recovery	96%	to	98%

This shows a range of 13 points on initial, 12 points on end point and two points on recovery.

The Oil City group also tested a sample of Pennsylvania steam cylinder stock which had the following range:

Gravity	25.9	to	27
Flash	545	to	565
Fire	600	to	635
Pour	35	to	60
Viscosity	141	to	148

This shows quite a wide range on all of the tests taken on this sample of stock.

These results have all been bulletined and you have no doubt had an opportunity to inspect them.

You will note there is a considerable difference in the results obtained on the samples of gasoline and cylinder stock. These differences in results on tests are each year costing our refinery members a very large sum of money, by reason of rejected materials which are subsequently returned to the refinery for rerunning or are resold at a considerable loss. In addition to the money loss, there is the loss in friendly relations with the customer, the extent of which is impossible to figure.

We firmly believe that these facts are worthy of the careful consideration of the executives of the refinery members and should interest them, not only in having their laboratories cooperate with us in our program but also in carefully watching the results of the checkups which are being bulletined from time to time, and in seeing that these reports reach their laboratories promptly. These reports should be preserved so that later reports may be checked against them and the improvement, if any, noted.

We trust we may have the hearty cooperation of both the company executives and chemists in our attempt to raise the standard of the average results of testing in our laboratories.

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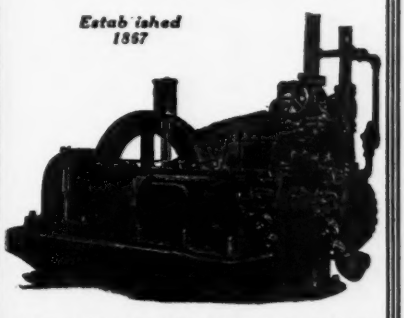

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Danger in Drain Pits If Closed by Car

TULSA, May 5.—Cars should not be permitted to entirely cover greasing pits at service stations if accidents are to be avoided. This is the advice of E. M. Hearne of the safety department of the Marland Refining Co., given in the current issue of the "Marland Service Man." Following is the advice of Mr. Hearne:

"Danger lurks in the grease pit if care is not taken to see that cars driven on them for greasing do not cover them entirely. It has been observed that now and then a service station salesman will get into one of these pits and then have the customer or one of his fellow workers drive or push the car over the pit completely covering it.

"As the curbing around the average pit leaves only five or six inches clearance for the car, the man in the pit is practically a prisoner, for he cannot get out quickly unless there is someone immediately at hand to move the car in case of emergency. Even then, a fire would result in serious injury and possibly death if the pit was not exceptionally clean. This would be especially true of the type pit where crank cases are drained in a bucket or pan and then poured into a drum, for all crank case drainings contain a large amount of gasoline at this particular time of year, due to continual choking of the carburetor.

"Then too, in most cases the man beneath the car is alone, the customer having gone on about his business while other salesmen are servicing cars at the front or opposite side of the building. In a case of this kind, were a fire to start from one of the many possible causes, the man in the pit would surely be seriously injured and possibly burned to death if the car covered the pit entirely.

"In practically every grease pit in use it is possible to drive the car part way on the pit until the underside of the front end is greased and then to drive it over the pit while the rear end is serviced. This method of procedure may be a little inconvenient but a little inconvenience is cheap as compared to the results of a possible fire. In addition to the above precaution this condition can be improved materially in pits where the crank case drainings are stored in drums, by keeping all drain pans and buckets emptied into the drum.

"In some pits an electric light from an extension cord is used for lighting at night. In case the lamp is not of the guarded vapor-proof type and the cord is not properly insulated with rubber there is a certain hazard. If the insulation becomes worn through to the wires or the lamp breaks while in service, sparks could easily be produced to ignite vapors in the pit. These possibilities could be easily overcome by seeing that all drop lights are of the vapor-proof type, with the bulbs protected by guards, and that all insulation cords are in good condition."

Production at Record But Supply Is Relatively Lower Than Year Ago

By Roger B. Stafford
N. P. N. Staff Writer

CLEVELAND, May 6. CRUDE oil production in the United States rose to a new height in March and stocks of crude gained almost 4,500,000 barrels, the Bureau of Mines statistical report shows.

Stocks of refined oils increased 3,500,000 barrels, making the total gain in above ground stocks of petroleum approximately 8,000,000 barrels. Stocks of both crude and refined oils March 31, 1927, stood at 543,570,000 barrels of a little more than 1,000,000 barrels less than stocks March 31, 1926.

The new supply of all oils in March averaged 2,610,000 barrels daily, or 17,000 barrels daily less than the February new supply, but was 260,000 barrels daily average more than the March daily average demand. The bureau's report shows these other outstanding facts:

1. Stocks of all oils March 31, represented 231.3 days' supply at current rate of demand for refined and crude oils, including exports, compared with 229.9 days' supply Feb. 28, 1927, and 250.7 days' supply March 31, 1926, at rate of demand in those months.

2. Excess of new supply of all oils over new demand declined from 298,000 barrels daily average in February to 260,000 barrels in March. Excess was 57,000 barrels daily in March, 1926.

3. Domestic crude production of 2,429,100 barrels daily, a new record and gain of 5100 barrels daily average over February. Imports were 6300 barrels daily average less than in February.

4. Daily average production of light crude oils increased but output of heavy crudes declined.

5. Decline in stocks of light crudes in California and increase in stocks of heavy crudes, net gain in both grades of 44,000 barrels.

6. Increase in stocks of light crudes east of California of 6,601,000 barrels, and decline in heavy crudes of 2,165,000 barrels, making net increase of 4,436,000 barrels.

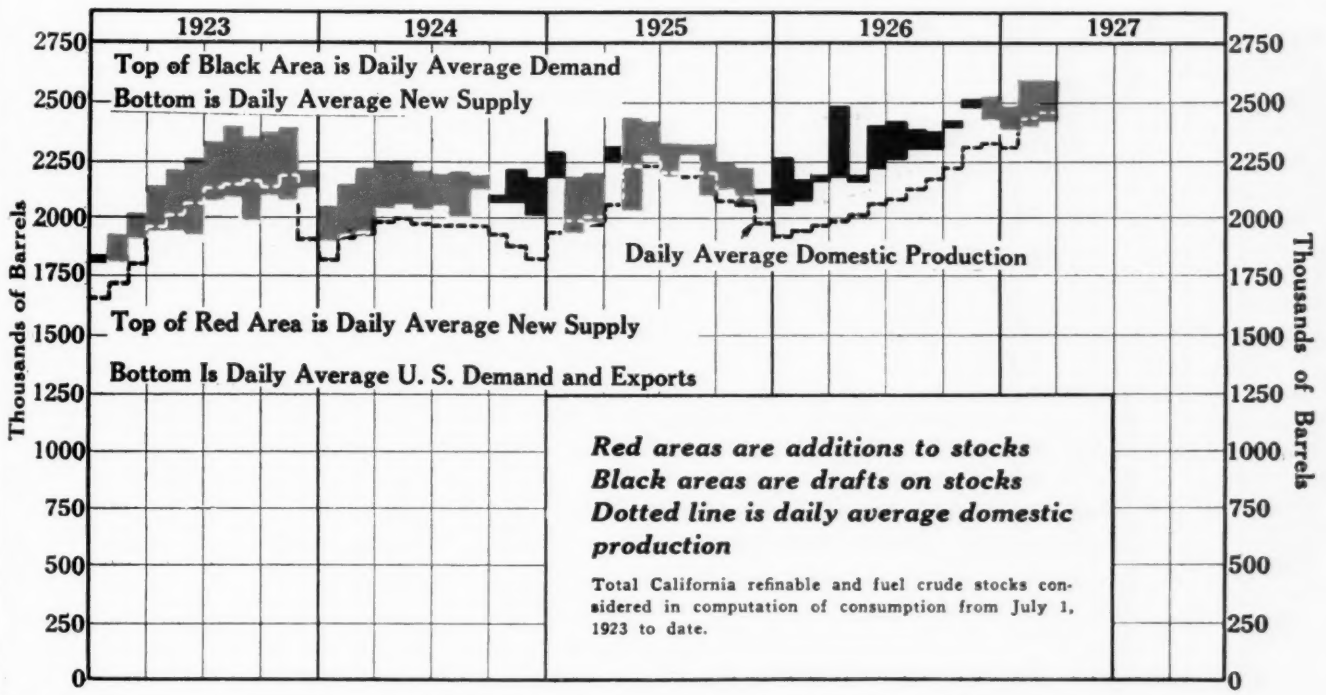
7. Output of gasoline averaged 900,000 barrels daily, a gain of 6000 barrels over the February average, and only 2000 barrels average below the January, 1927, output which is the peak gasoline production month. Average imports rose 1000 barrels daily average to 16,000 barrels.

8. Domestic demand for gasoline was 725,000 barrels daily average, a gain of 74,000 barrels average over February demand and 102,000 barrels average over the March, 1926, demand. Exports fell from 127,000 barrels daily average in February to 104,000 barrels average in March.

9. Gasoline stocks were 52,410,000 barrels March 31, a gain of 2,696,000 barrels over Feb. 28 stocks, and 6,289,000 barrels over stocks of March 31, 1926. Stocks March 31, 1927, represented 63.2 days' supply at March rate of domestic and export demand, compared with 63.9 days' supply Feb. 28 and 63.8 days' supply March 31, 1926, at demand rate current those months.

10. Kerosene output was slightly less than in February; domestic demand was larger; exports were smaller, and stocks rose 98,000 barrels.

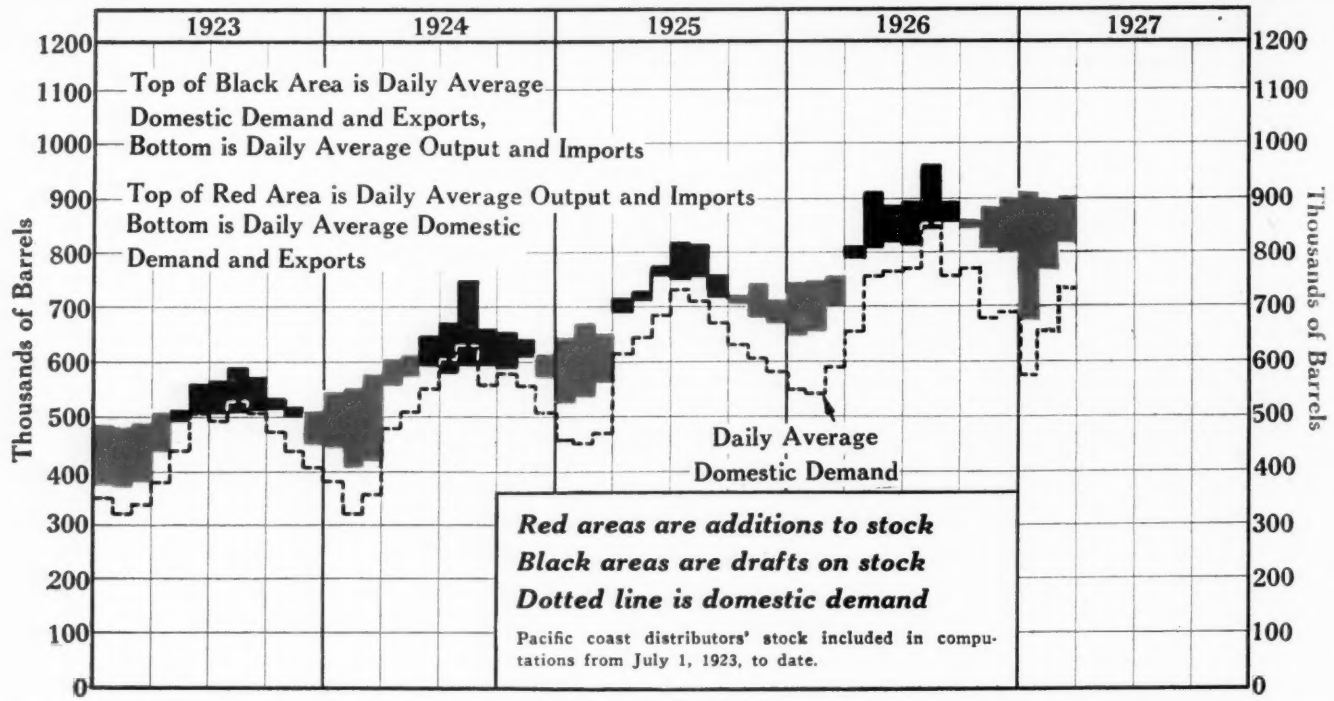
Crude Oil Production and Demand



March domestic production	2,429,000 Bbls.	daily av.
March imports	143,000 Bbls.	daily av.
Total new supply	2,572,000 Bbls.	daily av.
March indicated demand east of Calif.	1,750,600 Bbls.	daily av.
March California deliveries	638,400 Bbls.	daily av.
March exports	38,700 Bbls.	daily av.
Total indicated demand	2,427,700 Bbls.	daily av.

Stocks in pipe lines and at tank farms east of California March 31, 1927	252,050,000 Bbls.
Stocks at refineries east of California	37,432,000 Bbls.
Stocks of foreign crude not at refineries	412,000 Bbls.
California stocks 20° and lighter	29,568,000 Bbls.
California stocks heavier than 20°	87,886,000 Bbls.
Total stocks March 31, 1927	407,348,000 Bbls.
Total stocks March 31, 1926	420,216,000 Bbls.

Gasoline Production and Consumption



March domestic consumption	*900,000 Bbls. daily av.*	*March exports*	*104,000 Bbls. daily av.*
March imports	*16,000 Bbls. daily av.*	*Total indicated demand*	*829,000 Bbls. daily av.*
Total new supply	*916,000 Bbls. daily av.*	*Stocks March 31, 1927*	*52,410,000 Bbls.*
March domestic shipments	*725,000 Bbls. daily av.*	*Increase in stocks in March*	*2,696,000 Bbls.*
		Stocks March 31, 1926	*46,121,000 Bbls.*

11. Lubricating oil output was larger, domestic and export demand increased and stocks were lowered 326,000 barrels.

12. Paraffin wax output was increased, exports and domestic demand were larger and imports decreased but stocks increased 2,888,000 pounds to 201,340,000 pounds, the largest volume since December, 1922.

13. Gas and fuel oil output was slightly less, imports and exports decreased but stocks east of California rose 462,000 barrels.

14. There was little change in average natural gasoline production but stocks rose 78,000 barrels.

PRODUCTION of crude oil, because of the flush output of the Seminole district, rose 19,600 barrels daily average in March to 727,700 barrels average. In March, 1926, Oklahoma production averaged 464,700 barrels. Oklahoma's March, 1927, production was a record for the state.

Illinois production rose 2500 barrels daily average over February recovery and there were small gains in Michigan, New York, Ohio, Pennsylvania and West Virginia.

Texas production was down 7700 barrels daily average and California was 2300 barrels average less than in February.

Of the March production 2,110,800 barrels average was classified as light oil and 318,400 barrels as heavy, compared with 2,101,800 and 322,300 barrels, respectively, in February and 1,419,800 and 537,200 barrels, respectively, in March 1926, when Smackover heavy oil was being produced in large volume.

In March production for the entire Mid-Continent field average 1,446,900 barrels daily, compared with 1,047,104 barrels daily in March, 1926. California's production was 639,900 barrels as against 607,000 barrels a year before. Production in the Appalachian fields was more than 8000 barrels daily average more than a year before.

Production in all American fields in the first quarter of 1927 was 214,653,000 barrels, compared with 174,909,000 barrels in the first quarter of 1926. Imports of crude was 13,129,000 barrels as against 15,647,000 barrels in 1926, and total new supply of crude for the quarter was 227,782,000 barrels this year and 190,556,000 barrels last, a gain of 19.5 per cent.

Of the 143,000 barrels daily average crude imports, 53,300 barrels came from Mexico, 47,600 from Venezuela and 27,600 from Colombia. February receipts from these three countries averaged 63,200, 62,600 and 20,900 barrels, respectively.

REFINERS east of California as a whole, were carrying 227,000 barrels less crude March 31, than Feb. 28, although Oklahoma and Kansas refiners were carrying 290,000 barrels more. The largest decrease in refiners' stocks of crude in

Petroleum Supply and Demand — Barrels

	March 1927	February 1927	January 1927	March 1926
Domestic crude production: Light	65,435,000	58,850,000	61,324,000	49,795,000
Heavy	9,869,000	9,024,000	10,151,000	10,876,000
Imports of crude oil	4,434,000	4,181,000	4,514,000	7,216,000
Imports of refined oil	1,175,000	1,508,000	1,269,000	1,523,000
Total new supply of all oils	80,913,000	73,563,000	77,258,000	69,410,000
Total stocks end of preceding month	535,499,000	527,144,000	519,453,000	542,574,000
Total supply of all oils	616,412,000	600,707,000	596,711,000	611,984,000
Exports of crude oil	1,199,000	1,165,000	1,204,000	966,000
Exports of refined oil	9,450,000	9,686,000	10,062,000	8,276,000
Domestic demand, crude and refined	62,193,000	54,357,000	58,301,000	58,099,000
Total demand	72,842,000	65,208,000	69,567,000	67,341,000
Total stocks end of month	543,570,000	535,499,000	527,144,000	544,643,000
Increase in stocks	8,071,000	8,355,000	7,691,000	2,069,000
Daily average new supply	2,610,000	2,627,000	2,492,000	2,239,000
Daily average demand	2,350,000	2,329,000	2,244,000	2,172,000
Daily average excess of supply	260,000	298,000	248,000	57,000
Crude stocks				
East of California: Light	244,569,000	237,968,000	230,872,000	227,927,000
Heavy	45,325,000	47,490,000	48,100,000	59,850,000
In California: Light	29,568,000	29,770,000	31,017,000	43,973,000
Heavy	87,886,000	87,640,000	87,971,000	88,466,000
Total stocks of crude	407,348,000	402,868,000	397,960,000	420,216,000
Total stocks of refined	136,222,000	132,631,000	129,184,000	124,427,000

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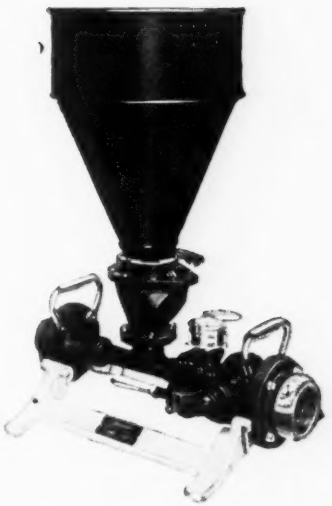

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Foamite-Childs Protection

A Complete Engineering Service

Against Fire

March was in the Rocky Mountain district, a decline of 119,000 barrels.

Pipe line and tank farm stocks of crude east of California rose 4,436,000 barrels from Feb. 28 to March 31, and were 2,217,000 barrels more March 31, 1927, than on March 31, 1926.

Daily average output of gasoline was 0.65 per cent more in March than in February. Output was curtailed in the Appalachian, Oklahoma, Kansas, and California districts. The largest increase, 11,117 barrels daily average or 10.96 per cent, was in the Indiana-Illinois district. Gains in Texas and Louisiana were due wholly in more activity in the Gulf Coastal region.

DAILY average gasoline shipments from only the Atlantic and Pacific Coast plants decreased. Shipments from all inland plants averaged more. Gasoline stocks were reduced in Texas only. Stocks were larger March 31, than March 31, 1926, in every district except the Indiana-Illinois. The largest gain in stocks over the year was in California. Domestic demand in March, 1927, was 11 per cent more than in March, 1926.

Natural gasoline production was increased in the Texas and Rocky Mountain districts. There was a considerable accumulation of natural gasoline in the Texas, Oklahoma-Kansas and Appalachian districts. More natural gasoline blend motor fuels were made in February but stocks were lowered about 3500 barrels.

Less cracking was done in March, the percentage of cracked gasoline have fallen 1 point to 31 per cent of entire refinery output. Use of natural gasoline at refineries was unchanged at 10 per cent and percentage of straight run was up 1 point to 59 per cent.

Crude Production—Barrels

(Daily Averages)

States	March 1927	*February 1927	March 1926
Arkansas	123,700	126,800	169,097
California	639,900	642,200	607,283
Colorado	7,800	7,900	6,226
Illinois	22,400	19,900	23,548
Indiana	2,200	2,500	1,936
Kansas	115,800	120,100	104,839
Kentucky	17,700	17,900	17,119
Louisiana	60,400	61,900	59,968
Michigan	1,200	1,000	.....
Montana	14,400	14,600	24,580
New Mexico	4,600	4,800	4,097
New York	6,300	6,000	5,097
Ohio	22,100	21,200	20,709
Oklahoma	727,700	708,100	464,716
Pennsylvania	27,200	26,360	23,419
Tennessee	100	200	107
Texas	560,400	568,100	334,387
West Virginia	17,500	16,700	16,097
Wyoming	57,800	57,900	73,839
Total U. S.	2,429,200	2,424,100	1,957,064
CLASSIFICATION BY GRAVITY			
24° A.P.I. and lighter	2,110,800	2,101,800	1,419,871
Heavier than 24°.	318,400	322,300	537,193

*Revised.

The increased gasoline yield was obtained from less crude than in February. The March charges of crude averaged 2,228,400 barrels daily compared with 2,262,600 barrels daily in February. The volume of unfinished oils charged to stills averaged 116,700 barrels daily in March and 122,900 in February.

THE March gasoline output was 35.1 per cent of the crude and unfinished oils charged to stills, compared with 34.2 per cent in February.

Kerosene production was reduced 2.60

Stocks of Crude Oil

(Domestic unless otherwise specified. Amounts in Thousands of Barrels.)

AT REFINERIES

Districts	March 1927	February 1927	March 1926
East Coast:			
Domestic	7,230	7,585	6,602
Foreign	2,206	2,604	3,118
Appalachian	1,627	1,606	1,616
Indiana-Ill. etc	2,561	2,491	1,571
Okla.-Kans	3,841	3,551	3,558
Texas Gulf Coast:			
Domestic	8,481	8,305	5,975
Foreign	257	237	266
Texas, rest of state	1,197	1,120	740
Louisiana Gulf Coast:			
Domestic	7,317	7,179	4,217
Foreign	889	969	1,871
N. La.-Ark	441	560	690
Rocky Mountain	1,385	1,504	1,498
U. S. East of Calif.	37,432	37,709	31,717
AT TANK FARMS, IN PIPE LINES AND ELSEWHERE THAN REFINERIES			
Appalachian	6,424	6,391	6,658
Kentucky	1,151	1,128	1,802
Lima-Indiana	695	666	882
Ill.-S. W. Indiana	11,810	11,808	11,468
Okla.-Kans., Texas except Coastal	158,834	153,248	144,688
N. La.-Ark	28,405	29,011	43,079
Gulf Coast	17,896	17,703	17,261
Rocky Mountain	26,835	27,236	29,863
Foreign:			
Atlantic ports	71	108	102
Gulf ports	341	450	312
East of Calif.	289,894	285,458	287,777
California:			
20° and lighter	29,568	29,770	43,973
Heavier than 20°	87,886	87,640	88,466
Grand Total	407,348	402,868	420,216
CLASSIFICATION BY GRAVITY			
(Elsewhere than refineries east of California)			
24° and lighter	244,569	237,968	227,927
Heavier than 24°	45,325	47,490	59,850

Crude Oil Production by Fields—Barrels

Fields	Mar. Daily Average 1927	Feb. Daily Average 1927	Mar. Daily Average 1926	Total Jan.-Mar. 1927	Total Jan.-Mar. 1926
Appalachian	85,800	83,100	77,129	7,305,000	6,677,000
Lima-Indiana	5,500	5,600	5,774	466,000	494,000
Michigan	1,200	1,000	.....	96,000	6,000
Ill.-S. W. Indiana	24,200	22,000	25,129	2,008,000	2,123,000
Mid-Continent	1,446,900	1,436,700	1,047,104	125,889,000	93,219,000
Gulf Coast	141,100	148,300	85,903	13,292,000	7,989,000
Rocky Mountain	84,600	85,200	108,742	7,593,000	9,341,000
California	639,900	642,200	607,283	58,004,000	55,060,000
Total U. S.	2,429,200	2,424,100	1,957,064	214,653,000	174,909,000
Imports	143,000	149,300	232,774	13,129,000	15,647,000
Total New Supply Crude	2,572,200	2,573,400	2,189,838	227,782,000	190,556,000

Gasoline Situation by Districts—Barrels

Districts	March Daily Avg. Output	February Daily Avg. Output	March Chge. %	March Daily Avg. Shipments	February Daily Avg. Shipments	March Chge. %	Stocks Mar. 31, 1927	Stocks Feb. 28, 1927	Stocks Mar. 31, 1926
East Coast	146,323	143,322	+ 2.09	106,258	107,464	— 1.12	10,711,000	9,469,000	10,097,760
Appalachian	34,000	35,499	— 4.22	31,194	26,786	+16.46	1,378,000	1,291,000	1,128,166
Indiana-Illinois	112,581	101,464	+10.96	103,323	89,893	+14.94	5,969,000	5,682,000	6,161,666
Oklahoma-Kansas	144,194	149,929	— 3.18	137,710	128,143	+ 7.47	4,539,000	4,338,000	3,989,714
Texas	193,516	190,357	+ 1.66	197,000	172,607	+14.13	7,107,000	7,215,000	5,598,642
Louisiana-Arkansas	65,774	64,321	+ 1.26	56,354	52,571	+ 7.20	4,141,000	3,849,000	3,799,214
Rocky Mountain	46,226	46,179	+ 0.10	37,710	37,000	+ 1.92	5,031,000	4,767,000	4,712,142
California	156,935	163,643	— 4.10	143,032	148,678	— 3.80	13,534,000	13,103,000	10,615,927
Total U. S.	899,549	893,714	+ 0.65	812,581	763,142	+ 6.48	52,410,000	49,714,000	46,103,231
Texas Gulf Coast	153,645	149,857	+ 2.53	160,000	138,928	+15.17	6,249,000	6,446,000	4,955,642
Louisiana Gulf Coast	53,000	50,321	+ 5.32	43,613	40,571	+ 7.50	4,010,000	3,719,000	3,585,714

Natural Gasoline and Motor Blends—Barrels

Districts	Daily Avg. Production Mar. (Net)	Daily Avg. Production Feb. (Net)	Stocks End of March	Stocks End of February	Motor Fuel Blends Made in March	Motor Fuel Blends Made in February	Stocks of Blends End of March	Stocks of Blends End of February
Appalachian	7,373	8,418	81,786	72,071	15,667	15,285	7,238	6,571
Indiana-Illinois, etc	1,152	1,276	8,571	10,213	2,762	2,452	381	333
Oklahoma-Kansas	32,258	35,459	332,619	301,761	113,857	100,666	20,476	21,857
Texas	21,813	20,323	189,857	146,595	17,976	15,476	2,310	4,500
Louisiana-Arkansas	5,376	5,442	41,429	39,262	11,952	6,809	1,595	2,357
Rocky Mountain	3,073	2,976	11,833	11,262	5,476	3,738	2,429	2,285
Total east of Calif.	71,045	73,894	666,095	581,166	167,690	144,428	34,429	37,904
California	31,720	30,867	30,619	37,547	.....	.....	48	119
Total United States	102,765	104,762	696,714	618,714	.....	.....	34,477	38,023

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per cent from February average production. Shipments were increased 6.54 per cent but were insufficient to overcome the excess of output over demand and stocks rose 98,000 barrels. Kerosene output was increased in all districts east of the Mississippi river and shipments were larger in all but the East Coast district. The largest addition to stocks was on the East Coast.

Appalachian and Oklahoma-Kansas districts curtailed lubricating oil output but production was speeded up elsewhere and, for the country, March production was 6.08 per cent more than February

Kerosene Situation by Districts—Barrels

Districts	March Daily Avg. Output	February Daily Avg. Output	March Chge. %	March Daily Avg. Shipments	February Daily Avg. Shipments	March Chge. %	Stocks Mar. 31, 1927	Stocks Feb. 28, 1927	Stocks Mar. 31, 1926
East Coast	29,226	26,500	+10.29	20,839	30,821	—32.39	1,705,000	1,445,000	1,345,262
Appalachian	10,968	10,821	+ 1.36	10,065	9,892	+ 1.75	292,000	264,000	217,357
Indiana-Illinois	12,968	12,929	+ 0.30	15,452	10,428	+48.18	863,000	940,000	842,428
Oklahoma-Kansas	24,097	25,071	— 3.88	26,548	24,178	+ 9.80	585,000	661,000	360,714
Texas	38,548	39,714	— 2.94	39,355	37,500	+ 4.95	1,805,000	1,830,000	1,594,976
Louisiana-Arkansas	17,323	18,000	— 3.76	15,387	11,214	+37.21	1,244,000	1,184,000	470,738
Rocky Mountain	4,353	4,393	— 0.87	5,516	4,750	+16.13	406,000	442,000	300,309
California	17,419	21,607	—19.38	18,581	13,643	+36.19	1,853,000	1,889,000	1,866,000
Total U. S.	154,904	159,036	— 2.60	151,742	142,428	+ 6.54	8,753,000	8,655,000	6,997,785
Texas Gulf Coast	31,710	31,893	— 0.57	32,000	31,535	+ 1.47	1,345,000	1,354,000	1,365,643
Louisiana Gulf Coast	15,710	16,321	— 3.74	13,968	10,428	+33.95	1,198,000	1,144,000	459,881

Lubricants Situation by Districts—Barrels

Districts	March Daily Avg. Output	February Daily Avg. Output	March Chge. %	March Daily Avg. Shipments	February Daily Avg. Shipments	March Chge. %	Stocks Mar. 31, 1927	Stocks Feb. 28, 1927	Stocks Mar. 31, 1926
East Coast	30,806	25,821	+19.31	37,129	17,643	+110.45	2,717,000	2,913,000	2,844,904
Appalachian	11,742	12,286	— 4.29	12,065	10,250	+17.71	1,018,000	1,028,000	867,738
Indiana-Illinois	8,097	7,964	+ 1.67	9,548	6,250	+52.77	753,000	798,000	796,976
Oklahoma-Kansas	5,710	6,286	— 9.16	6,000	4,642	+29.25	475,000	484,000	465,548
Texas	23,000	22,679	+ 1.42	23,548	20,035	+17.53	1,921,000	1,938,000	1,580,476
Louisiana-Arkansas	1,839	1,679	+ 9.53	2,032	1,357	+49.74	125,000	131,000	105,595
Rocky Mountain	1,677	1,429	+17.35	2,484	1,285	+93.31	136,000	161,000	186,690
California	5,968	5,607	+ 6.44	6,548	5,357	+22.23	890,000	908,000	792,143
Total U. S.	88,839	83,750	+ 6.08	99,355	66,821	+48.69	7,035,000	8,361,000	7,640,070
Texas Gulf Coast	22,065	21,679	+ 1.78	22,742	19,142	+18.81	1,878,000	1,899,000	1,546,119
Louisiana Gulf Coast	1,839	1,679	+ 9.53	2,032	1,357	+49.74	125,000	131,000	105,500

Gas and Fuel Oil—Situation by Districts—Barrels

Districts	March Daily Avg. Output	February Daily Avg. Output	March Chge. %	March Daily Avg. Shipments	February Daily Avg. Shipments	March Chge. %	Stocks Mar. 31, 1927	Stocks Feb. 28, 1927	Stocks Mar. 31, 1926
East Coast	190,226	178,357	+ 6.65	186,032	193,392	— 3.81	5,951,000	5,821,000	4,906,214
Appalachian	17,839	18,857	— 5.40	17,935	20,500	—12.51	797,000	800,000	496,643
Indiana-Illinois	54,742	51,357	— 6.59	56,226	55,071	+ 2.10	862,000	908,000	811,965
Oklahoma-Kansas	82,161	87,179	— 5.76	74,032	90,928	—18.58	4,419,000	4,167,000	3,331,571
Texas	188,806	206,679	— 8.65	186,968	213,821	—12.56	7,436,000	7,379,000	6,801,023
Louisiana-Arkansas	99,677	101,607	— 1.90	90,871	103,642	—12.32	2,507,000	2,234,000	2,560,881
Rocky Mountain	20,161	19,214	+ 4.93	26,645	25,035	+ 6.43	589,000	790,000	1,359,258
California	390,806	414,786	— 5.78	.....	.....	.....	.....	.....	.....
Total U. S.	1,044,418	1,078,036	— 3.12	1,029,516	702,389	+46.57	22,561,000	22,099,000	20,267,473
Texas Gulf Coast	145,032	161,142	— 10.0	142,323	170,285	—16.42	6,266,000	6,182,000	5,813,382
Louisiana Gulf Coast	60,548	59,179	+ 2.31	52,613	60,964	—13.70	1,905,000	1,659,000	1,723,500

Coke, Asphalt, Miscellaneous Products

	Coke Output (Tons)	Coke Stocks (Tons)	Asphalt Output (Tons)	Asphalt Stocks (Tons)	Miscel. Products Output (Bbls.)	Miscel. Products Stocks (Bbls.)	Unfin. Oil Output (Bbls.)	Unfin. Oil Stocks (Bbls.)	Losses (Bbls.)
January, 1926	73,701	230,566	162,383	174,564	491,652	1,063,619	2,097,000	37,880,000	1,995,000
February	64,105	210,247	152,468	182,063	481,428	1,073,238	2,340,500	38,808,000	1,767,000
March	80,689	219,820	210,596	195,052	597,810	1,217,119	2,195,928	39,098,000	2,059,000
April	76,031	216,163	198,598	239,953	572,381	1,138,095	2,481,952	38,785,000	1,982,000
May	79,982	234,025	248,390	229,819	779,310	1,210,428	2,756,024	38,681,000	2,270,000
June	81,326	246,707	300,970	200,881	784,476	1,010,381	2,767,000	40,081,000	2,308,000
July	83,358	260,727	281,196	184,853	800,310	897,452	2,927,214	38,527,000	2,419,000
August	89,100	277,668	305,944	200,175	733,000	858,000	2,848,000	39,822,000	2,605,000
September	95,111	287,546	308,572	188,512	749,000	835,000	2,721,000	39,500,000	2,492,000
October	87,946	287,354	323,348	187,845	738,000	863,000	2,790,000	40,006,000	2,437,000
November	91,459	285,905	215,973	166,788	661,000	1,030,000	2,455,000	38,770,000	2,267,000
December	92,500	290,582	213,697	193,331	644,000	1,100,000	2,399,000	38,829,000	2,288,000
1926, Total	995,308	.....	2,922,788	.....	8,030,000	.....	31,240,000	.....	26,928,000
January, 1927	92,914	287,394	191,180	215,337	511,000	1,189,000	2,473,000	*39,287,000	2,367,000
February	88,102	294,682	172,685	234,450	546,000	1,282,000	2,729,000	38,986,000	2,091,000
March	98,163	325,521	222,309	235,251	525,000	1,356,000	2,412,000	39,392,000	2,369,000

*Revised

Daily Average Runs to Stills—All Oils—Barrels

	East Coast	Appala.	Ind.-Ill.	Okla.-Kans.	Texas	La.-Ark.	Rocky Mt.	Calif.	Total U. S.
January, 1926	334,742	73,516	185,709	261,903	426,129	196,484	87,548	558,097	2,120,900
February	360,036	78,428	192,964	256,857	434,674	200,357	96,250	549,821	2,169,400
March	369,032	74,677	187,419	250,742	422,774	203,839	98,355	563,228	2,176,500
April	365,400	77,133	203,033	266,000	451,667	205,867	98,733	557,900	2,225,200
May	373,516	81,677	211,065	293,903	431,451	199,161	101,322	588,613	2,280,700
June	382,800	85,433	211,467	293,267	446,867	207,433	107,033	574,033	2,308,300
July	418,742	83,097	210,193	292,645	448,516	206,839	102,355	575,193	2,337,600
August	395,935	87,613	208,677	300,484	446,484	211,129	106,903	599,645	2,356,900
September	404,600	86,667	212,300	300,167	452,900	213,000	109,333	607,867	2,386,833
October	427,935	87,645	208,710	279,645	482,935	210,612	113,323	587,645	2,398,500
November	462,200	86,567	214,600	288,800	480,466	209,033	108,566	585,633	2,435,866
December	442,968	84,838	209,355	284,516	516,354	226,903	102,613	589,322	2,456,870
January, 1927	408,355	82,581	206,226	278,258	517,160	228,516	103,161	616,516	2,440,774
February	412,714	86,928	197,785	295,964	504,642	228,107	103,321	633,108	2,462,571
March	439,387	83,097	209,161	283,548	479,806	224,903	103,290	597,839	2,421,032

Kerosene, Lubes and Wax — By Months

KEROSENE (Bbls.)	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1926	5,122,000	.....	1,871,000	3,521,000	6,851,000
February	4,746,000	1,000	1,577,000	3,166,000	6,855,000
March	5,516,000	1,000	1,876,000	3,492,000	7,004,000
April	5,037,000	1,000	1,760,000	3,268,000	7,014,000
May	5,210,000	4,000	1,623,000	3,227,000	7,378,000
June	5,009,000	3,000	1,601,000	2,908,000	7,881,000
July	4,877,000	21,000	1,612,000	2,733,000	8,434,000
August	5,162,000	20,000	2,689,000	2,731,000	8,196,000
September	5,207,000	21,000	1,843,000	3,419,000	8,162,000
October	5,126,000	3,000	1,818,000	3,255,000	8,238,000
November	5,357,000	.....	1,943,000	3,592,000	8,060,000
December	5,399,000	.....	1,847,000	3,037,000	8,575,000
1926 Total	61,768,000	75,000	22,060,000	38,329,000	.....
January, 1927	5,113,000	.....	1,616,000	3,882,000	8,190,000
February	4,453,000	1,000	1,399,000	2,590,000	8,655,000
March	4,802,000	3,000	1,351,000	3,356,000	8,753,000
LUBRICANTS (Bbls.)					
January, 1926	2,648,000	2,000	727,000	1,632,000	7,544,000
February	2,448,000	1,000	789,000	1,294,000	7,910,000
March	2,646,000	4,000	740,000	2,180,000	7,640,000
April	2,692,000	3,000	928,000	2,039,000	7,368,000
May	2,863,000	11,000	717,000	1,869,000	7,656,000
June	2,681,000	3,000	984,000	2,042,000	7,314,000
July	2,831,000	1,000	747,000	2,071,000	7,328,000
August	2,648,000	2,000	660,000	2,092,000	7,226,000
September	2,645,000	2,000	705,000	2,019,000	7,149,000
October	2,768,000	2,000	704,000	1,778,000	7,437,000
November	2,724,000	1,000	820,000	1,722,000	7,620,000
December	2,699,000	1,000	917,000	1,827,000	7,576,000
1926 Total	32,293,000	33,000	9,438,000	22,565,000	.....
January, 1927	2,570,000	81,000	864,000	1,496,000	7,867,000
February	2,345,000	.....	620,000	1,231,000	8,361,000
March	2,754,000	149,000	895,000	2,334,000	8,035,000
WAX (Pounds)					
January 1926	53,015,000	632,000	29,061,000	18,204,000	122,773,000
February	50,307,000	668,000	28,709,000	21,075,000	123,964,000
March	55,714,000	456,000	25,005,000	24,788,000	130,341,000
April	55,371,000	647,000	31,560,000	18,715,000	136,084,000
May	56,135,000	213,000	23,968,000	19,068,000	149,396,000
June	50,673,000	833,000	27,300,000	18,348,000	155,254,000
July	54,267,000	2,089,000	30,768,000	24,138,000	156,704,000
August	54,441,000	968,000	26,906,000	20,142,000	165,065,000
September	49,228,000	252,000	29,303,000	25,463,000	159,779,000
October	56,011,000	1,384,000	28,365,000	20,884,000	167,925,000
November	54,678,000	674,000	25,164,000	21,059,000	177,054,000
December	55,950,000	1,189,000	28,410,000	20,452,000	185,331,000
1926 Total	645,790,000	10,005,000	334,519,000	252,336,000	.....
January, 1927	54,114,000	460,000	29,228,000	17,842,000	192,835,000
February	47,363,000	2,048,000	23,623,000	20,171,000	198,452,000
March	53,644,000	910,000	28,205,000	23,461,000	201,340,000

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production. March shipments averaged 48.69 per cent more than the February shipments. The East Coast's shipments in March were more than double average February shipments. Stocks of lubes were lowered in every district.

Output of fuel and gas oil was increased in the East Coast and Rocky Mountain districts but lessened elsewhere. Shipments were larger than in February from the Indiana-Illinois and Rocky Mountain districts. Stocks of fuel and gas oils were reduced in the Appalachian, Indiana-Illinois and Rocky Mountain districts.

The March report was from 329 refineries with a daily charging capacity of 2,886,000 barrels. They were operating during March at 77 per cent of their rated capacity. The 322 refineries that reported for February were rated at 2,850,000 barrels and operated at 79 per cent of their capacity.

Gas and Fuel Oils — By Months

GAS and FUEL OILS (Bbls.)					
January, 1926	28,981,000	863,000	3,612,000	.....	*23,266,000
February	27,094,000	1,585,000	3,190,000	.....	*21,445,000
March	29,824,000	947,000	2,345,000	.....	*20,037,000
April	29,029,000	1,148,000	3,475,000	.....	*19,788,000
May	30,380,000	1,368,000	2,735,000	.....	*20,858,000
June	29,130,000	1,856,000	3,370,000	.....	*22,554,000
July	31,461,000	1,485,000	2,427,000	.....	*25,696,000
August	31,154,000	1,629,000	3,582,000	.....	*26,500,000
September	30,698,000	817,000	2,750,000	.....	*27,151,000
October	32,444,000	857,000	2,015,000	.....	*26,376,000
November	31,624,000	1,111,000	5,020,000	.....	*26,859,000
December	33,376,000	764,000	3,830,000	.....	*24,898,000
1926 Total	365,195,000	14,430,000	38,351,000	.....	.....
January, 1927	32,936,000	660,000	3,732,000	.....	*23,195,000
February	30,185,000	1,053,000	3,812,000	.....	*22,099,000
March	32,377,000	525,000	3,657,000	.....	*22,561,000

*These stocks for east of California only.

Crude Oil Stocks—By Months

(Thousands of Barrels)

1926	East of Calif.	†In Calif.	Total U. S.
January	291,400	130,841	422,241
February	287,975	131,638	419,613
March	287,710	131,678	419,388
April	286,208	124,290	410,498
May	284,009	125,359	409,368
June	281,432	122,794	404,533
July	278,184	121,344	399,528
August	277,486	119,893	397,379
September	277,771	117,964	395,735
October	277,014	117,928	394,942
November	277,099	117,497	394,596
December	278,077	118,131	396,208
1927			
January	278,972	118,988	397,673
February	285,458	117,410	402,868
March	289,894	117,454	407,348

†Includes heavy fuels.

Gasoline Demand and Supply — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1926*	23,208,000	384,000	3,361,000	17,582,000	41,524,000
February	21,259,000	408,000	3,245,000	15,814,000	44,132,000
March	23,868,000	517,000	3,094,000	19,302,000	46,121,000
April	24,296,000	454,000	4,256,000	20,848,000	45,767,000
May	25,271,000	621,000	4,530,000	24,213,000	42,916,000
June	24,946,000	464,000	3,744,000	23,803,000	40,779,000
July	25,504,000	460,000	3,702,000	24,752,000	38,289,000
August	25,942,000	674,000	3,572,000	26,912,000	34,421,000
September	25,360,000	258,000	3,853,000	22,929,000	33,257,000
October	26,337,000	874,000	2,783,000	23,973,000	33,712,000
November	26,245,000	486,000	3,920,000	20,618,000	35,905,000
December	27,498,000	452,000	3,413,000	21,419,000	39,023,000
*1926 Total	299,734,000	6,052,000	43,473,000	262,165,000	.....
January, 1927	27,960,000	520,000	3,557,000	17,888,000	46,058,000
February	25,024,000	416,000	3,544,000	18,240,000	49,714,000
March	27,886,000	493,000	3,219,000	22,646,000	52,410,000

*All 1926 figures except imports revised.

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Crude battery at Pure Oil Co. refinery at Muskogee. The tube still can be seen at the far end of the battery. N. P. N. Staff Photo

Cylinder Stock is Made Continuously At Pure Oil Co. Muskogee Refinery

By J. C. Chatfield
N. P. N. Staff Writer

MUSKOGEE, May 9

THROUGH painstaking attention to details resulting in close control of distillation, the Pure Oil Co. has found it possible to produce steam refined cylinder stocks continuously direct from its crude battery. The company has been following this method of producing 600 stock since the refinery was rebuilt last year.

A marked reduction in costs chargeable to 600 stock has been achieved by the continuous method. A part of this cost saving is apparent currently while another part will accrue over a period of time in lessened depreciation of equipment and lower maintenance costs.

Obviously one of the important savings is in fuel, since by the continuous method little new heat is added to the oil in the final reducing still of the continuous battery while with the batch system the entire amount of oil to be reduced must be raised to a proper temperature for reducing, in addition to being maintained at the critical temperature for an extended period. With the continuous operation the still and furnace are not permitted to cool down as is necessary between batch runs.

DURING the six months or more that the Pure Oil Co. has been producing cylinder stock continuously it has not been found necessary to bring down the final still for cleaning. The still appears to be as clean now as when the process was begun. In ordinary batch operation it is necessary to clean the cylinder stock reducing still each time a batch is completed and the still pumped off.

Continual heating and cooling of a still and its setting, with the consequent severe expansion and contraction, is one of the greatest causes of depreciation of batch equipment. Once heated, the still in the continuous battery is kept at an even temperature so that depreciation probably is less rapid than if the still was standing idle.

The crude battery of the Muskogee plant of the Pure Oil Co. consists of one tube still and seven shell stills. At present the battery is capable of handling from 5000 to 6000 barrels per day. Additional tower equipment is being installed in connection with the tube still which is calculated to increase the capacity of the battery.

The gasoline fraction is taken from the crude in the tube still towers. Kerosene is recovered from the first two shell stills, gas oil for pressure still charging stock is taken off from the third and fourth stills. A greater part of the wax distillate is taken off overhead from stills Nos. 5 and 6 so that the residuum entering the final still is almost up to tests required of 600 steam refined cylinder stock.

THE final still is kept at as near 650 degrees F. as possible to bleed the cylinder stock down to test. Exhaust steam is injected into the still in the usual manner.

The only secret of success in the continuous manufacture of cylinder stocks, according to G. A. McBride, plant superintendent, lies in the control of operating conditions. Vigilance of stillmen in charge of the battery and maintenance of equipment so that it will function properly are the two requisites.

One of the stillmen in charge of the crude battery has been employed at the Muskogee refinery for 12 years and another has been on the job seven years. Both of thse men are of the careful, steady type. They know what operating conditions are necessary through long experience and how they may be maintained.

A constant volume of oil must be circulated through the crude battery to give the best results. An excess flow is likely to bring the stock out without sufficient bleeding in the last still. An excess amount of oil reaching the No. 7 still due to too heavy firing in earlier stills is likely to be followed by a period of deficient flow which probably would result in a partial breaking down of the oil and the formation of excess amount of tar.

In order that a constant volume may be circulated, the pumps are carefully regulated at all times. The number of strokes per minute are checked regularly in addition to the usual checks of liquid levels in all stills.

There is a duplicate stand-by for every circulating pump. Stand-by pumps are cut into the system frequently so that the other pumps may be inspected,

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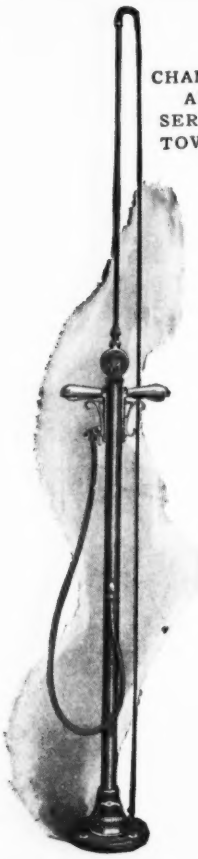

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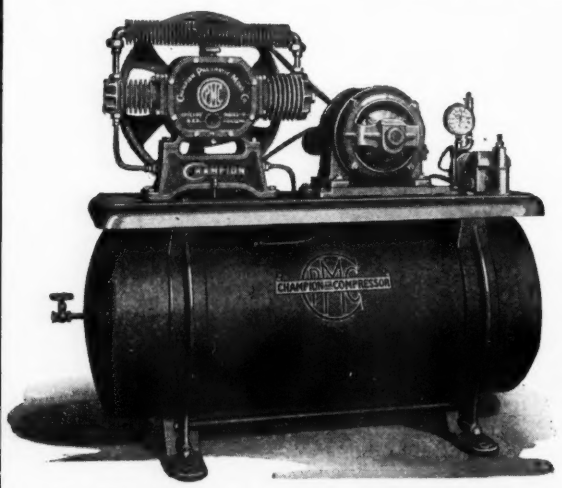

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re-packed and put in perfect operating condition.

It has been found at the Pure plant that the height of liquid in the crude tank from which oil is being pumped has a bearing on the rate of charging. From a full tank the pumps pick up more oil due to the hydrostatic head at the intake. As the level in the tank goes down it is necessary to speed up the pumps in order to maintain a constant rate of charge.

Regulation of the amount of steam injected into the No. 7 still is an important factor. A regulating valve assures that exhaust steam admitted to the still is at a constant pressure. As an emergency measure live steam is available for the still in case there should not be enough exhaust steam collected from other parts of the plant.

An automatic valve in the line serves to admit the live steam at any time pressure in the exhaust steam system goes below the proper point.

Regulation of still firing is another feature which is important. The No. 7 still should be kept as nearly as possible at 650 degrees F. at all times in order that the cylinder stock may come out up to test. A sudden rain storm or abrupt change in atmospheric temperature present firing problems which are the most difficult. At such times the stillmen watch their temperature indicating devices on all stills with more than ordinary care. Fires are adjusted quickly to bring temperatures up to normal. This is necessary in spite of the fact that all stills are insulated.

When changes are made in the crude being run at the plant, care must be exercised in building up the proper operating conditions for the new oil. Samples of the crude are run under laboratory conditions and an approximate schedule of temperatures and charging rate set up. These, of course, are somewhat at variance from the best conditions necessary in actual commercial operation. The operators feel their way carefully at first, guided by the laboratory findings, until they find exactly the best method of running the new oil.

At the present time the Pure plant is running 5000 barrels of crude per day which is yielding 18 per cent 600 steam refined cylinder stock. The cylinder stock production before final finishing into bright stock is thus 900 barrels per day.

No fuel oil is produced at the plant except as residuum from the cracking plant. All of the crude is taken off overhead except the 18 per cent cylinder stock bottoms which is pumped out of the No. 7 still in the same manner as fuel oil in the skimming operation.

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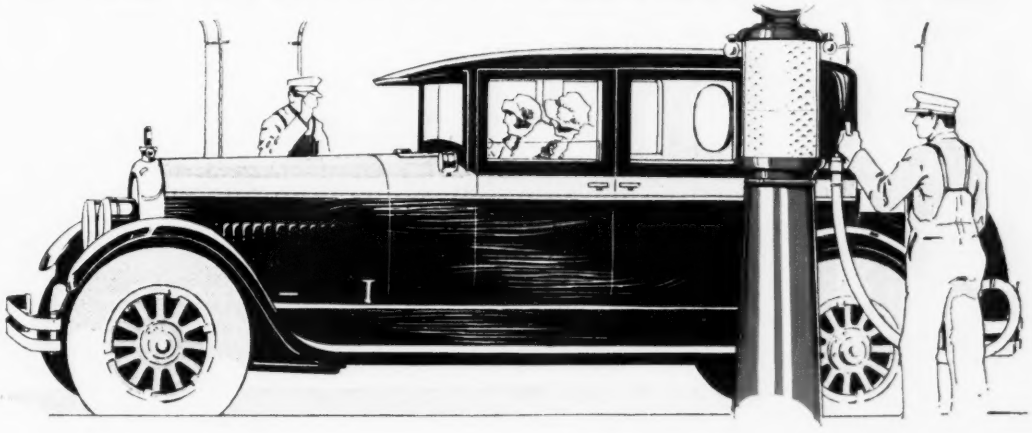

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Improvement in Oil Separator Suggested by Employe

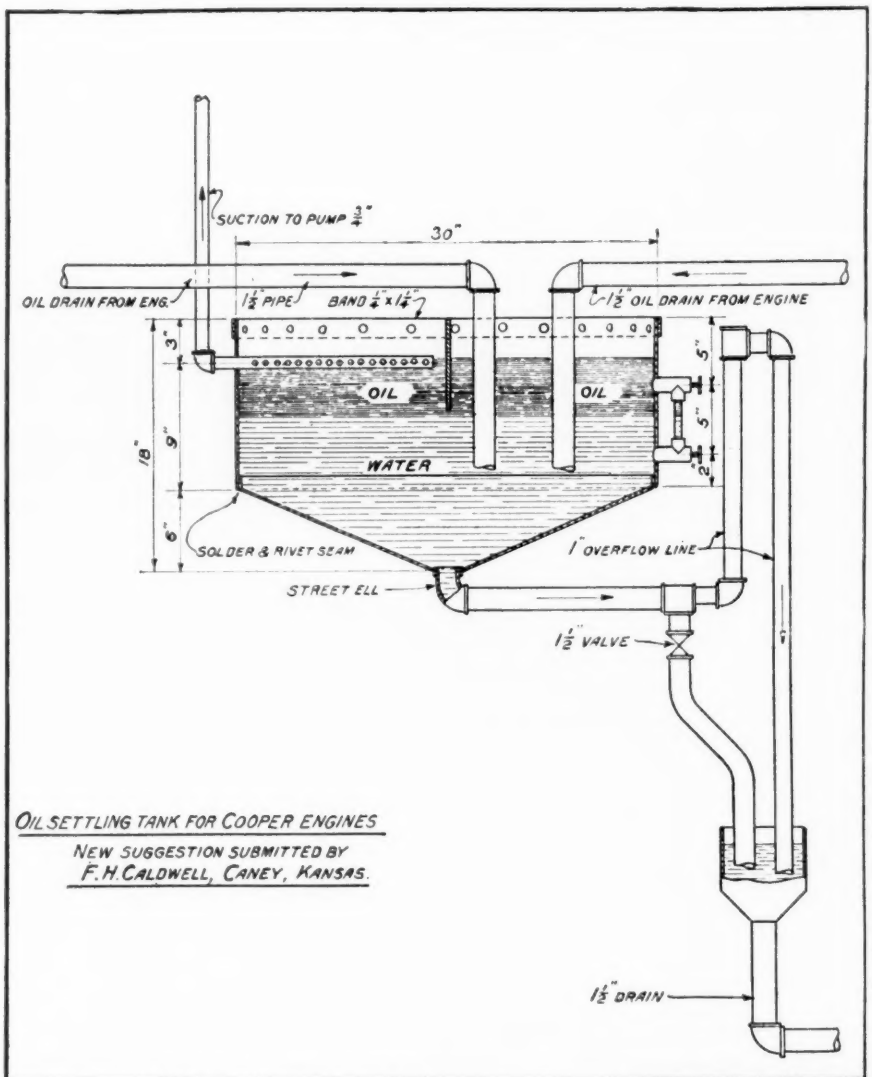
By J. C. Chatfield
N. P. N. Staff Writer

TULSA, May 6.—By a simple change costing only about $7 per engine, oil separators on C. & G. Cooper engines used by the Empire Companies are being improved to effect a large saving of oil and of time in cleaning dirt accumulations. The change is being made in all natural gasoline and gas compressing stations as a result of the suggestion of Frank H. Caldwell of the Caney, Kan., compressor station.

The oil separating tank formerly in use was changed by installing a conical bottom equipped with a 1½ inch draw-off line. A baffle plate was installed over the cone between the draw off line and the lubricator pump section. A gauge glass was applied to the tank. The accompanying drawing illustrates the construction of the separator.

To begin operations the cone is filled with water until it barely shows in the gauge glass. When the engine is in operation the used oil is returned to the separator through the two oil drain lines shown in the drawing. Since the outlets of these lines are well below the water level the oil is washed of any entrained dirt as it rises. The foreign matter is drained out at the bottom from time to time.

The suction line of the oil pump is a short piece of ¾ inch pipe extending from the wall of the separator to with-



in about an inch of the baffle plate. It is perforated throughout its entire length.

A constant level of water is maintained in the settling tank by a 1 inch overflow line.

One of these oil settling tanks has been in use at the Caney station for about nine months. Application of the changes to other stations is being made as a result of the suggestion of Mr. Caldwell which is his contribution to the "Suggestion Box" maintained by the company. The separator suggestion has been recognized by an article in the current issue of "The Empire," an emyloyes' newspaper.

Is Nature Still Making Oil Scientists Ask

By Special Correspondent

WASHINGTON, May 6.—A disclosure of high aim and intense endeavor, in respect of future sources of petroleum was made within the week at one of the meetings of scientists, held annually for the discussion of their work. Jointly the American Geophysical Union and the American Petroleum Institute are trying to trace the agencies, which ages ago, produced the petroleum pools from which the world is drawing.

If the methods by which nature produced the petroleum can be brought to light, the search for pools now unsuspected may be intelligently directed and waste effort avoided. Work has been going on for a year in Pamlico sound, the large body of brackish water inside of Cape Hatteras on the coast of the Carolinas and in the shallow waters surrounding the channel islands near Los Angeles.

The sediment in the sea is being examined for evidences of the processes by which nature formed and is forming pools of petroleum. It is regarded as almost certain that the sea is forming new pools, hence the examination of the sediment in the relatively stagnant parts of the ocean.

That fact was announced at a dinner attended by the members of the oceanography section of the geophysical union at the Cosmos club, the latter the organization of which all the resident scientists of Washington are active members and of which scientists not living in Washington are non-resident members. Once a year the scientists meet here to discuss questions in which the popular interest cannot be great until concrete results can be announced.

Announcement in regard to the examination of the sediment in the bodies of water mentioned was made by Parker D. Trask, research associate for the petroleum institute. The work is being carried on by a committee of which Dr. Austin H. Clark of the Smithsonian Institution, authority on the biology of sea life, is a member. Other members are Dr. W. Vander Gracht, vice president of the Marland Oil Co., and Dr. T. Wayland Vaughan of the Scripps Institution of Oceanography.

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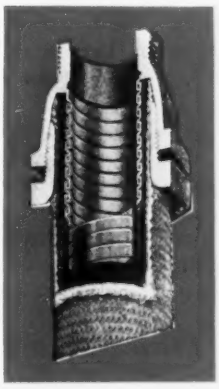

SUPPOSE you were in this man's collar, you wouldn't feel comfortable yourself. Then imagine a 1000 pound knife-like pressure cutting against you, every time you turned your head. That's what happens at the ordinary coupling of your gasoline hose, every time you lift the hose for draining. No gasoline hose can withstand it —the cause of 90% of all gas hose leaks.

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National Petroleum News
834 Caxton Building **Cleveland, Ohio**

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

A Modern Boiler Plant for Emery

ALEXANDER LACKMAN, refinery manager of the Emery Manufacturing Co. at Bradford, told me while attending the spring meeting of the National Petroleum Association at Cambridge Springs, about the new boiler plant for which contract has been let. The Emery plant has a charging capacity of 2000 barrels a day. In common with a great many other refineries, the Emery plant for some time has had a hard time to make enough steam for its purposes. The decision to install the new steam-raising equipment resulted from this condition.

The new boiler will be of Erie City make and the entire work of installation will be handled by Erie City engineers.

So far as we know, this steam installation will be the first in a small or medium sized plant, to use powdered coal as fuel. Rated at 875 horsepower, the new boiler is designed to run at 200 per cent of rating, replacing five 250-horsepower boilers. The fact that inasmuch as the coal is to be pulverized before burning, slack can be used, is in Mr. Lackman's mind, a great factor in fuel saving, coupled with the fact that every phase of the boiler's operation will be completely automatic and foolproof.

Mr. Lackman was educated as a chemical engineer in Germany and was brought to this country 20 years ago as an oxalic acid expert by the elder Emery, who at that time was operating an oxalic acid plant. Mr. Lackman had made the study of petroleum chemistry a side line and he left the acid plant to take charge of operation of the refinery.

Testing High Pressure Refinery Equipment

WHILE the attention of refiners is focused on the problems of fire prevention more than ever before, it is possible that there is one phase of the problem that does not get the attention it deserves. This is the testing at regular and frequent intervals of reaction chambers and so on of cracking equipment.

Probably every refinery superintendent where a cracking plant is operated, sees that tests are made by drilling the walls of the pressure vessels at regular intervals but perhaps in some cases, the inspections are not frequent enough. This is particularly true in cases where the charging stock upon which the cracking plant operates is changed.

After running for some time on a certain charging stock, those responsible for operations know the rate of corrosion pretty well and can tell about how much the walls of the pressure vessels are weakened per week or per month. When the charging stock is changed, however, there may be a great change in the corrosion rate which may not be appreciated. Corrosion may sneak up on the operating force faster than they think with a resulting explosion costing many lives and wrecking the plant.

Standard of New York Builds Plant for Soviet

AMTORG TRADING CORP., of New York, reports that the Standard of New York has contracted with the Naphthasyndicate, the soviet oil organization, to buy up to 2,500,000 barrels of kerosene over the next three years. The contract includes the building of a kerosene treating plant in Russia, this to be turned over to the soviet when completed and the Standard is to operate it under lease for three years. Equipment for the treating plant already has arrived at Batoum, on the Black Sea, the report states. The plant will have capacity of about 30,000 barrels a month.

It is presumed that the treating plant will be of the sulfur dioxide type, invented by Dr. L. Edeleanu of Roumania and described by him in the columns of NATIONAL PETROLEUM NEWS.

The Amtorg statement says that this is the first time the Naphthasyndicate has contracted with a foreign company for the building of a plant.

Extension of Automatic Still Control

CONTINUOUS manufacture of refined products and elimination of the greater part of the re-running that in many plants is thought necessary to produce finished products, is being carefully studied by every operating man in the business. Herbert A. Ross, engineer associated with H. S. Bell in work in the plants of the eastern refiners, had a good deal to say on this subject in the paper he delivered at the Cambridge Springs meeting of the N. P. A.

In this issue of NATIONAL PETROLEUM NEWS there is a story in which the method developed by the Pure Oil Co. for continuous production of steam refined cylinder stock is described.

Further development along this line, it would seem, will call for the more widespread use of automatic measuring and controlling devices. It is pointed out in the Pure Oil article that careful regulation of flow through the stills, of liquid levels and of temperatures are necessary to make the process successful.

Refinery stillmen, pumpers and so on are good men and they do their best but day in and day out their best cannot equal the results of automatic control of the various steps of processes by instruments which, unless they get out of order, cannot go wrong. The chemists in the refinery laboratories can carefully study and map out the most advantageous temperatures, rates of flow and so forth for a process but the highest economy in carrying out that process in the refinery itself will depend upon how closely the directions of the technologists are carried out.

Eight Millions for Refinery Equipment

R. C. HOLMES, president of The Texas Co., in making his annual report on the company's affairs, published in The Texaco Star, April issue, states that the company's expenditures in 1926 for refinery equipment totalled $8,303,647. This included the purchase of a small refinery, it is true, but the price paid for that could not have been very high.

Here is the way refinery capital investment was divided: Additional pressure stills, $4,538,555; tankage, $666,555; other refinery equipment, including three batteries of lubricating stills, construction of a refinery at Craig, Col., and purchase of refinery at Pryse, Ky., $3,098,536.

Mr. Holmes says the company on Dec. 31 had 80 pressure stills in operation and 22 under construction. Some of the latter are now in operation and all are expected to be finished by the middle of the year. The 80 cracking units made 8,500,000 barrels of gasoline in 1926, the report states.

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This eastern marketer we refer to cut his overhead *permanently* by standardizing on Bowser equipment.

Up until then, cog racks were being smashed, pump gears were being stripped, there was always something going wrong, and men were constantly on the road, going from station to station, working overtime to keep the pumps operating.

But, since this marketer standardized on Bowser, his maintenance costs have been low—"extremely low," he says—and service has constantly improved, and gallonage increased steadily.

This same thing invariably "happens" to marketers who standardize on Bowser equipment. If you want to see the dollars-and-cents figures, first of savings and then of increased profits, as applied to your stations, we'd be glad to go into details at your convenience. Address Dept. 40.

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Our Industry—A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

A NUMBER of shifts in the Marland organization in Texas include the transfer of C. R. Boling of the Amarillo land department to Wichita Falls, from which point he will be in charge of the previously separate Panhandle and Wichita Falls districts. J. V. Howell, district geologist at Amarillo, has been given a leave of absence for the summer, and will do geological exploration work for the Hudson's Bay-Marland Co., with headquarters at Edmonton. J. J. Maucini, paleontologist, will head Amarillo district geological work in Mr. Howell's absence.

Paul Hunter, who has been an assistant in the Fort Worth geological department, is being placed in charge of a central west Texas district at Abilene. J. A. Bonham, recently engaged in land work at Wichita Falls and previously located at Shreveport in a similar capacity, is now in charge of the Abilene land department.

* * *

ALL departmental offices of Humble Oil & Refining Co. in west Texas have been transferred from San Angelo to McCamey, in southwestern Upton county, with David Frame in charge as general superintendent. Frame formerly was in charge of the Amarillo district. B. N. Wisely, formerly head of drilling and production in the west Texas territory, has been promoted to be assistant general superintendent at McCamey. J. W. House is now district superintendent. H. Ormiston has been made chief clerk of the division offices.

Department heads in west Texas retain their present status as follows: N. E. Tanner, land and scouting; J. Ben Carsey, geological; Dorothy Ogden Carsey, sub-surface geology.

* * *

ED R. PERRY, formerly vice president and general manager of Cosden & Co., at Tulsa, has been elected president of the Texas Exploration Co., a Delaware holding corporation, and its subsidiary, the Exploration Co. of Texas. Mr. Perry succeeded J. H. Holmes of the New York banking firm of J. H. Holmes & Co., a president of the holding company; he succeeded M. L. Mertz of the San Angelo National bank as head of the subsidiary organization. A. S. Everest, formerly general manager of the Exploration Co. of Texas, was elected a vice president, succeeding T. R. Cowell, Jr. Messrs. Mertz and Cowell remain on the board of directors. The parent company held its election at Pittsburgh, Pa., and the subsidiary at San Angelo.

HARRY R. DENTON

HARRY R. DENTON, veteran land man in the Mid-Continent, has been transferred back to the west Texas headquarters of Skelly Oil Co., at San Angelo. The Skelly offices, which are being enlarged, were moved from the Allen building to the Ricker & Dodson building. The southern New Mexico district has also been placed under the San Angelo geological office.

Mr. Denton, whose land work in the petroleum industry dates back to the earliest development in Oklahoma, has been identified with Skelly operations for several years. He originally opened Skelly offices at San Angelo, afterwards returning to Oklahoma and the Texas Panhandle for special work. Recently, he has been making his home at Tulsa.

Besides Mr. Denton, the San Angelo force includes R. T. Lyon, J. E. Morarero, C. T. Heenan, and John D. Clark.

* * *

CHARLES MERCER, formerly chief scout of the Gypsy Oil Co., at Tulsa, and later attached to the executive staff of the Sinclair Oil & Gas Co., in north Texas, has been recently transferred to the Fort Worth offices of the Continental Supply Co., after serving nearly a year in the Continental's field store at Pampa, Texas. Before becoming identified with the oil business, Mr. Mercer was confidential secretary to United States Senator Robert L. Owen at Washington. His home has been at Fort Worth since Ranger development days.

J. S. BALLARD, secretary for employees' benefits in The Texas Co., is giving general publicity to the fact that in the administration of the company's Death and Disability plan he has seen several regrettable cases where the deceased employee had failed to change his beneficiary when he should have done so. The advice of Mr. Ballard, given through the company's various publications and otherwise, is applicable to death and disability benefits in any company, or under other forms of insurance.

Mr. Ballard says:

"While all employees upon entering service designate a beneficiary, some erroneously believe that death, marriage or divorce automatically changes the beneficiary. The designated beneficiary can only be changed by the employee in writing, and the payments under the plan can only be made to a designated beneficiary, so that if a single employee designates his mother, later marries and then dies, the mother and not the widow will receive the death benefits.

"In one case an employee had designated his sister and a year later married, but did not change his beneficiary. The result was that when the employee died his sister was entitled to the benefits and not his widow and child.

"We want to strongly urge upon every employee the importance of changing beneficiary in the event of the death of the one first designated or the marriage or divorce of employee. If you are one of those who have failed to attend to this detail, DO IT NOW. TOMORROW MAY BE TOO LATE."

* * *

JAMES V. SCHILLING writes from his home in San Antonio to say that he has resigned as superintendent of the land department of the Dixie Oil Co., Inc., and that he has been succeeded by Robert H. Wallace, formerly of the legal department of the Ammex Production Co. Mr. Schilling will go in business for himself, he says, devoting his entire time to the handling of high grade royalties and mineral fee lands. He will not handle any leases whatever.

Before becoming identified with the Dixie's land operations several years ago, Mr. Schilling was engaged in land and scouting work for the Empire Gas & Fuel Co., with Cisco, Texas, headquarters; and previously had scouted the Osage Nation territory in Oklahoma for the Gypsy Oil Co. He is widely and favorably known in oil circles throughout the southwest.

* * *

JAMES L. TAYLOR and Charles P. Link of San Angelo and F. L. Bouknight of Houston have organized the Taylor-Link Oil Co., a Texas corporation, with paid up capital of $250,000, to drill test wells, buy and sell acreage. Offices will be maintained at Houston, San Angelo and Dallas. Taylor, the president, will be located at San Angelo; Link, vice president, at Dallas and Houston; and Bouknight, secretary-treasurer, at Houston.

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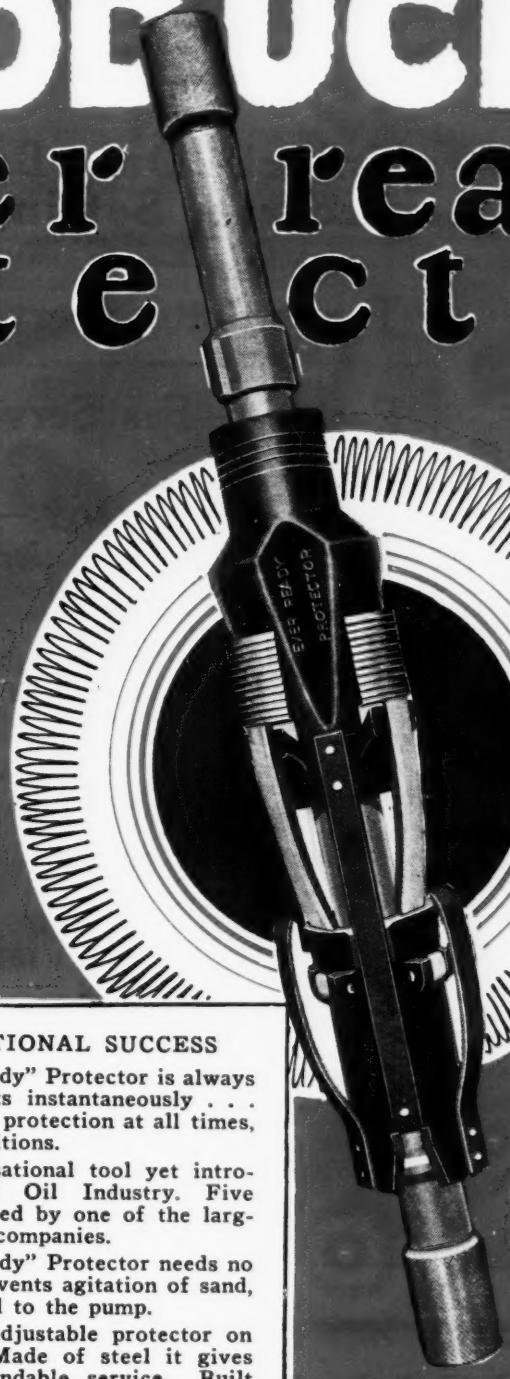

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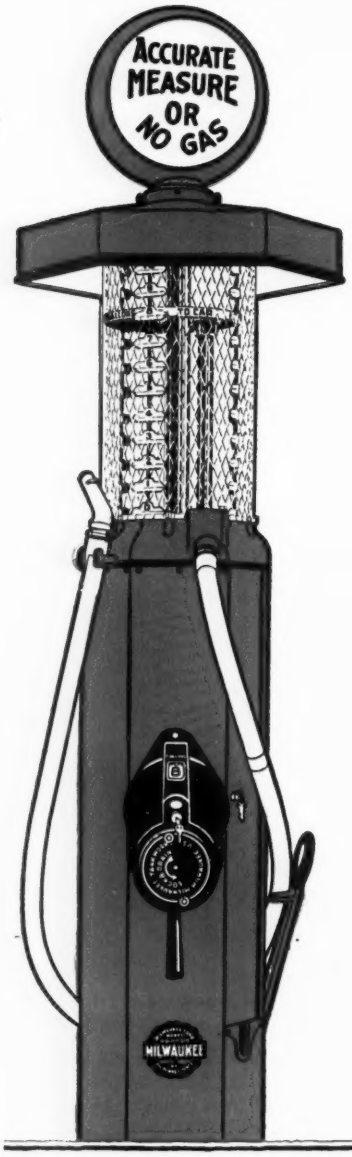

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Letters to the Editor

Editor, NATIONAL PETROLEUM NEWS:

Permit me to compliment you on your most excellent article in your issue of April 6, entitled, "Thorough Knowledge of Tank Car Market Would Help Buyer and Seller."

Before going any further into the article let me preface my remarks by saying we are refiners as well as marketers and that our investment in refineries runs well into six figures.

The point you bring home so ably is this, as we see it, refiners, particularly large ones, in their haste to secure gallonage do go out and contract on a basis which, if placed upon a small plant like those we control, would force that plant into bankruptcy within a few weeks. Small plants are forced to go into the field to find small jobbers who are willing to listen to an argument on a quality basis, personal service, special service or the like and to get a better price. Small plants market a good deal of their output through brokers who are like specialists on the market and who by correct diagnosis of conditions do anticipate markets and sell ahead for the small refiners on a profitable basis.

I know large refiners who, for example, instead of finding a market at home, and there is a market at home, for their gasoline suddenly send a man into Ohio to get business disturbing the price situation, and there accepting ¼ or ½ cent, or even more, less than the market they should obtain if they work their own territory properly.

If a refinery can secure a guaranteed price on crude for a year's time and knows its cost over that year then it can intelligently sell its product at what should be a profit. But, to contract, as so many refiners are doing, on a false market structure such as the one you outlined in your article, or to guarantee a jobber a profit on his business when no one guarantees the refiner a profit on the crude he is obliged to buy, is indeed poor marketing.

Our experience has taught us that a branch office manager feels that whatever price he can get for gasoline is a wonderful price. He is without information as to cost and generally without information as to markets such as you mention in your article, and is fostered by the idea to sell, sell, sell.

The specialist in the business, just as in the stock market, is a high grade oil marketer who, because of his capital invested, must be able to meet the price of any refiner and by reason of his accurate knowledge of the buying situation throughout the country, plus the refining situation of one section as opposed to the other, is able without loss to meet the refiner's price regardless of how false or foolish that refiner's

price is. When the day comes, that you mention, that refiners will refuse to contract with a jobber as they now do, for market price date of shipment with a 4-cent or 4½-cent guaranteed margin at any time, then and then only will the market price right itself to represent the bulk of the business that can be obtained at a fair price to a refiner.

M. Lloyd Freese
Altitude Petroleum Co.
Tulsa.

Oil Pollution Committees Picked by Institute

NEW YORK, May 5.—Prompt action on the part of the oil industry to eliminate oil pollution of streams and harbors is urged in a resolution adopted by the board of directors of the American Petroleum Institute at its seventh annual meeting in Tulsa recently. Six sectional committees to investigate oil pollution conditions and to initiate remedies, have been appointed, with Robert F. Hand, Standard Oil Company of New Jersey, New York, as chairman of a general committee on oil pollution.

Members of these committees and their company connections are:

Atlantic Coast Section: William A. Courtnay, Jr., Sun Oil Co., Philadelphia, Pa.; E. R. Cox, Atlantic Refining Co., Philadelphia, and F. W. Miller, Standard Oil Co. of New Jersey, New York City.

Mid-Continent Section: E. E. Swope Magnolia Petroleum Co., Beaumont, Tex.; F. B. Koontz, Mid-Continent Petroleum Corp., Tulsa, and H. W. Camp, Empire Refineries, Inc., Tulsa.

Gulf Coast Section: R. G. Hamaker, Humble Oil & Refining Co., Houston; A. S. Patrick, The Texas Co., Port Arthur, Tex.; George N. Bliss, Gulf Refining Co., Port Arthur, Tex.; and Claude F. Reynaud, Standard Oil Co. of Louisiana, Baton Rouge, La.

Great Lakes Section: W. E. Warner, Vacuum Oil Co., Olean, N. Y.; J. E. Evans, Standard Oil Co. of Indiana, Whiting, Ind.; and J. S. Hess, Sinclair Refining Co., New York City.

Rocky Mountain Section: F. R. Russell, Continental Oil Co.; A. W. Peake, Midwest Refining Co.; and Frank McCarthy, Producers & Refiners Corp., all of Denver.

Pacific Coast Section: A. S. Russel, Standard Oil Co. of California, San Francisco; G. N. Van Senden, Shell Co. of Calif., Martinez, Calif., and C. E. Sampson, General Petroleum Co., San Francisco.

STRATFORD, S. D.—Calling customers by their first names in this rural community where much of the business comes from the tractor trade, has been found by Stanely B. Neill, agent for the High Grade Oil Co., to establish a friendly feeling for customers which they appreciate.

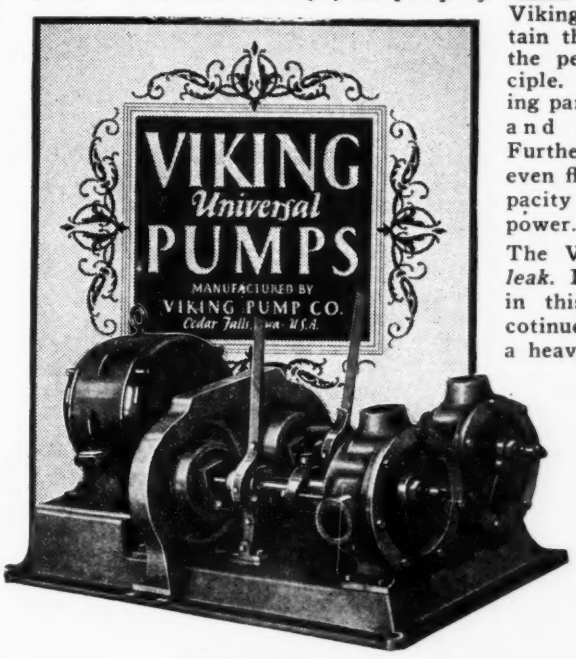
A new truck with 300 gallon tank for country delivery has been added.

Buy a pump by name
Be Safe - Specify VIKING

REPUTATIONS for products are not easily earned and held. Back of the name of Viking is a pump reputation that is known throughout the country—a reputation for economy of operation and constant, continuous performance.

Concerns who buy Vikings in numbers as large as a thousand, no longer bother about a survey when pump buying comes up. They hold Vikings in good repute. The figures on their maintenance records have developed a decisive conclusion.

Since the Viking name has become known as meaning among the best in pumps—you, too, can buy your pump by "name". When you specify Viking you are sure to obtain the one pump that has the perfected Rotary Principle. With only two moving parts there is little wear and minimum repairs. Further positive suction and even flow assure greater capacity at less operating power.



The Viking pump *will not leak*. It ends the daily waste in this manner — which if cotinued for long soon levies a heavy penalty.

High capacity at low cost is possible with the Viking since any of the 2-inch outfits will unload an 8,000 gallon tank in 1½ hours. Our large illustrated catalog will show a type that answers your needs. Why not write for it today?

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Cedar Falls, Iowa — **Walkerville, Ontario, Canada**

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LEARN real facts which have never been published before on the subject of burning liquid fuel, by W. N. Best, the recognized authority.

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National Petroleum News
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New Equipment for Plant Improvement

Personal Notes of the Manufacturers

National Petroleum News

The Maritime Eduction Co., Ltd., is now installing the first commercial unit of the patented lead jacket retort of the American Hydrocarbon Co., Inc., on its property near Moncton, N. B. The property consists of nearly 200 square miles of shale land which have been diamond drilled, according to the American Shale Reduction Co., New York City.

Mathew Lodge spent several days in April in New York in connection with the construction work. Mr. Lodge is also a director of the Canadian National Railways.

Erection of plants in central and southern Europe is being considered by the American Hydrocarbon Co. for the use of its process.

* * *

Hiergesell Brothers, Philadelphia, have put out a folder describing their new and improved Durac hydrometer for testing the gravity of oil. The company's new catalog, covering its complete line of oil laboratory equipment, thermometers, A. S. T. M. testing instruments, calibrated glassware and so on will be sent on request addressed to the company at 2007 Bellevue Ave., Philadelphia.

* * *

The Leader Iron Works, Decatur, Ill., has sent out a price sheet as of May 1, covering its line of bulk station and filling station equipment and terms of sale.

* * *

Glass Decorating Corp., Baltimore, has just been incorporated in Maryland to specialize on manufacture of glass signs of various kinds used by oil companies at filling stations. The feature of the company's product is that the colors are fused into the glass and, according to R. C. Taylor, are fire and waterproof and will not crack or peel off. The company has taken over the modern plant of the Pyrograph Advertising Sign Co., of U. S.

* * *

General Electric Co., Schenectady, N. Y., announces that welding is to be adopted by the company in the construction of its factory and other buildings hereafter. The company feels that as soon as shop methods are developed it will be cheaper to fabricate buildings by welding than by riveting.

* * *

Moto Service Elevator Co., Chattanooga, Tenn., is offering the Gladish electric elevator, manufactured by the American Hoist Corp., of Chattanooga, for use at filling stations for greasing cars. It is stated that the Gladish elevator is in use at more than 300 filling stations in 28 states.

In an effort to improve the art of arc welding, the Lincoln Electric Co., Cleveland, O., is offering prizes totalling $17,500 for the three best papers written on that subject. The prize is now in the hands of the American Society of Mechanical Engineers, 29 W. 39th St., New York City, to which society all papers are to be submitted. The Society will appoint a committee of judges who will pass on the merits of papers and recommend the awards. Anyone may compete.

The competition is to encourage improvements in arc welding, the pointing out of new and wider applications of the process, the discovery of improved methods of testing welds to assure their integrity, or indicating advantages and economies to be gained by its use.

Three prizes will be awarded, the first being $10,000 for the best paper, $5000 for the second, and $2500 for the third, provided the papers are of sufficient importance and value to justify the awarding of the prizes.

* * *

The Prest-O-Lite Co., New York, announces the sale of the storage battery branch of its business to a new company, Prest-O-Lite Storage Battery Corp.

Prest-O-Lite Co., Inc., while discontinuing the battery branch of its business will continue the manufacture and sale of acetylene gas for welding and cutting metals and lead burning. Besides continuing the operation of the 32 plants involved in the acetylene business, the company will continue operation of that portion of the Indianapolis, Ind., plant devoted to the manufacture of gas cylinders, acetylene generators and other apparatus.

* * *

The Dayton Pipe Coupling Co., Dayton, O., has just issued a handsome 64-page catalog covering its complete line of pipe couplings, clamps, fittings of all kinds and special forgings. The catalog shows pictures of the various products of the company, describes manufacturing processes and contains photographs showing interior views of the company's manufacturing plant.

* * *

Hills-McCanna Co., Chicago, has put out a folder illustrated in colors "pointing the way to uninterrupted operation." The company specializes in castings and forgings of non-ferrous alloys for refiners to resist corrosion.

* * *

Merco Nordstrom Valve Co., San Francisco, on May 1 moved the company's New York office from 110 W. 40th St. to 11 W. 42nd St., according to H. S. Shuey, secretary.

Curtis Pneumatic Machinery Co., St. Louis, has put out Bulletin G3 describing and illustrating its hydraulic automobile washer. The washer is made in three sizes, one-nozzle, 1 horsepower; two-nozzle, 2 horsepower and two-nozzle three horsepower for faster work. The machine, it is said, will take cold water out of the line or hot water, soap water or solutions out of barrels or tanks in any combination by varying the connections of the intake manifold. An automatic pressure governor of Curtis design, bypasses the water when the pressure gets above 300 pounds. Price lists of the three types of washer are given in the bulletin.

* * *

Service Station Equipment Co., Bryan, O., has brought out a complete line of self-contained automatic air compressors for filling stations, fitting in with the Eco line of air stations. The Eco-Gille air compressors have been designed by G. W. Gille in charge manufacture and engineering at the company's factory. Mr. Gille has had 18 years' experience in the development of the air compressor for filling stations, having been associated with the Gardner Governor Co., Quincy Compressor Co. and U. S. Air Compressor Co.

* * *

National Transit Pump & Machine Co., Oil City, Pa., has recently shipped several hot oil pumps to Canada for use in the Montreal refinery of Imperial Oil, Ltd. These, according to N. A. Newton, sales manager of the National Transit, are probably the largest hot oil pumps ever built. They have a steam end 24x36x24-inch stroke. They are twin single synchronized pumps. The forged fluid end is 6½-inch diameter by 24-inch stroke.

* * *

Worthington Pump & Machinery Corp., 115 Broadway, N. Y., has put out Bulletin H. O. 1900 entitled, "Equipment for Power Plants." The bulletin discusses modern power plant practice particularly as regards steam condensers, pumps, air compressors, Diesel engines, gas engines and oil and water meters. The bulletin is well illustrated and contains practical information for the power plant engineer.

* * *

The Air Reduction Co., Inc., New York, announces that it has acquired the Interstate Oxygen Co. with oxygen plants at Wheeling, W. Va., and Steubenville and Portsmouth, O., and the Compressed Gas Manufacturing Co., which has an acetylene plant at Huntington, W. Va.

RED-HEADS in stock at our Pittsburgh Shop.

When Delivery Counts

PDM tanks are in stock at our Pittsburgh shop, and also in New York City, Philadelphia, Baltimore, Washington, D. C., Cleveland, Indianapolis and Milwaukee. A single tank or several carloads can be delivered to you on short notice from the nearest stock.

PDM tanks range from 75 to 26,000 gallons in capacity; they are made of 3/16", 1/4" and 5/16" metal ordered to weight, and with one plate to the ring; they are tested and guaranteed tight at 5 pounds' pressure. They meet the Underwriters' requirements and can be furnished with Underwriters' labels if desired. The tanks stocked in New York City also meet the New York City code requirements.

Send for Specification Sheet No. 53 and price lists of PDM tanks.

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373 Glenn Bldg., Atlanta, Ga.

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CLOSED TANKS FOR ALL PURPOSES

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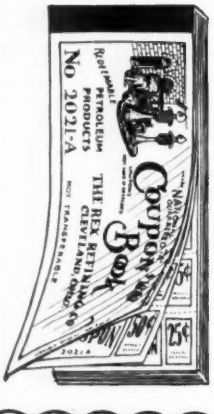
Thoroughbred products refined from crude of the highest quality. The jobber who ties up with the Cushing line is assured of lasting profits.

58-60 U. S. Motor Gasoline
64-66-375 E. P. Aviation
41-43 W. W. Kerosene
36-38 Straw Distillate
32-36 Gas Oil uncracked
22-26 Fuel Oil (Cushing
24-26 Fuel Oil or Blackwell)

PRODUCING
REFINING
TRANSPORTING
MARKETING

Refineries at
CUSHING and
BLACKWELL,
OKLAHOMA

CUSHING REFINING AND GASOLINE CO.
CUSHING, OKLAHOMA



NATIONAL GUARANTEED COUPON BOOKS

Use them to go after the better business of the 2, 3 and 4-car owners. Sell them to fleet operators, transfer companies and large buyers of gasoline, oil and accessories.

Get the big users coming to your station and you won't need to worry about your daily gallonage.

Sample books, prices and our sales plan for the asking.

NATIONAL CHECKING CO.
271 Chestnut St. St. Paul, Minn.

New Stations Built or Being Built

La Crosse, Wis.—Three permits for filling stations are being sought here, one by White Eagle Oil & Refining Co., one by George E. Hauswirth and one by J. E. Monegan.

* * *

El Dorado, Ark.—Kikwik Gasoline Co., marketing outlet of Kettle Creek Refining Co., will build filling station. E. C. Prator is manager of the latter.

* * *

Quincy, Kans.—Kelly Hearn is building service station here, to handle products of Peerless Oil & Refining Co.

* * *

New England, N. D.—J. E. Daly, agent for the Standard Oil Co. of Indiana here, is building filling station.

* * *

Paris, Tenn.—Paris Oil Co. is building two service stations, one at Paris and one at McKenzie, Tenn.

* * *

Pittsburgh, Kans.—City Oil Co. is building service station at Iola, Kans., handling Texaco products.

* * *

Quincy, Kans.—Peerless Oil & Refining Co., Chanute, Kan. is building two service stations here.

* * *

Red Cloud, Neb.—Farmers expect to organize here to build a co-operative filling station.

* * *

Ottowa, Kans.—Ramsey Motor Co. is building bulk station at Queenemo, Kans.

* * *

Kansas City, Ken.—Willard Breidenthal seeks permit for filling station.

* * *

Washburn, Wis.—B. & M. Auto & Oil Co. may build service station here.

* * *

Little Rock, Ark.—Filling station will be erected here by S. O. Carroll.

* * *

Wessington Springs, S. D.—The Texas Co. is building service station.

* * *

Creighton, Nebr.—Blue Star Oil Co. is building filling station.

* * *

Tonganoxie, Kan.—Fount Smith is erecting service station.

* * *

Sherwood, N. D.—T. V. Rowan will build service station.

* * *

Gould, Ark.—Pierce Oil Corp. is building filling station.

* * *

Boone, Ia.—Skelly Oil Co. will build service station.

* * *

Lamar, Mo.—Paul Bartlett erecting service station.

* * *

Livingston, Tenn.—Co-operative Oil Co. is building two service stations, one

at Celina and one at Monterey, Tenn., according to William F. Reagan, partner in the firm.

* * *

Chanute, Kan.—Peerless Oil Co., with headquarters here, is building filling station at Independence, Kan., and is planning a bulk station there also.

* * *

Sac City, Ia.—Homer C. Carter is building filling station. A station will be erected by W. J. and Paul W. Dixon.

* * *

Bottineau, N. D.—H. L. Woods, of Grand Forks, N. D., is completing service station here.

* * *

Greenville, Tex.—J. M. Carsey will erect filling station and store rooms.

* * *

Grantsville, W. Va.—Robert B. Bossler is building service station here.

* * *

Fremont, Nebr.—Fred Felhauser will erect filling station and garage.

* * *

Lawton, N. D.—Cities Service Oil Co. is completing filling station here.

* * *

Des Moines, Ia.—Black Hawk Oil Co. is building filling station.

* * *

Mason City, Ia.—Black Hawk Oil Co. will build service station.

* * *

Burlington, Kan.—Pat J. Ryan is building service station.

* * *

Beatrice, Nebr.—Continental Oil Co. is erecting filling station.

* * *

Leavenworth, Kan.—Abe Goldman is building filling station.

* * *

Pryor, Okla.—M. L. Manley is completing filling station.

* * *

Sturgeon Bay, Wis.—Ed Olson completing filling station.

* * *

St. George, Kans.—W. A. Snapp will erect filling station.

* * *

Butler, Mo.—H. L. Oberweather erecting service station.

* * *

Lamar, Mo.—Harry Blair is completing filling station.

* * *

Cook, Minn.—L. F. Luthey will build service station.

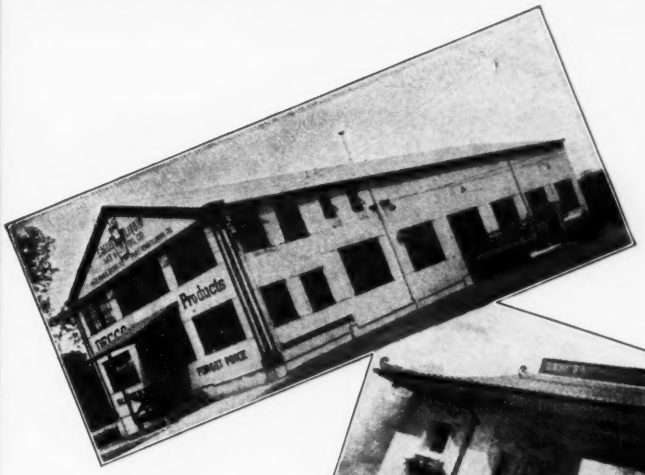
* * *

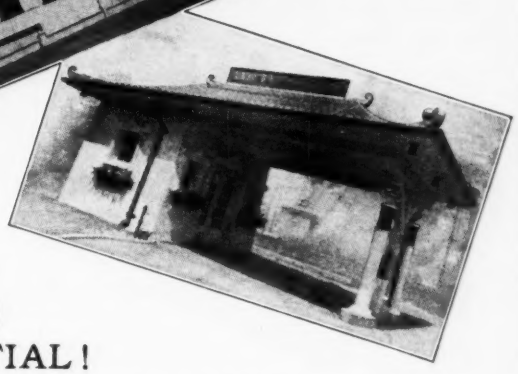
Topeka, Kan.—P. D. Foucht will build filling station.

NATCHEZ, MISS.—The Independent Oil Co. will open stations in Meadville and Bude, Miss. and continues to do a steady business here, according to Sam Abbott, an official of the company.

VIRGIL, KAN.—Gasoline business is reported very quiet here by H. T. Sellers, of the Peerless-Sellers Service Station, due in part to the floods, which prevent farmers from getting into the fields.

STEEL BUILDINGS for EVERY PURPOSE





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THE EDWARDS MANUFACTURING CO.
524-544 Eggleston Ave. **Cincinnati, Ohio**

Distinctive Curb Standards

National Curb Standards are used by the leading oil companies because of their quality and artistic appearance.

Specializing in this line has placed us in the position of experts. We build superior Curb Standards of pipe or shapes in large or small quantities with or without advertising signs.

We also manufacture to specifications any type of piping or frame support for overhanging signs.

Write today, stating your requirements and ask for our attractive prices and descriptive literature.

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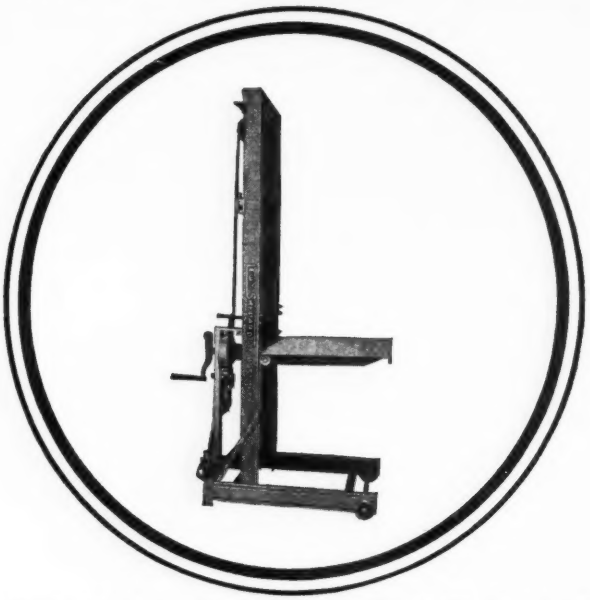
A Master Portable Elevator



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THERE is no need to pay more if your loads are 500 lbs. or less. No portable elevator is more efficient on loads of this capacity. The 500 lb. Stacker embodies the essential and superior features of our Worm Drive Stackers.

Write, now, for our latest catalog and the new "Jacklift and Stacker Practice," just off the press.

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Representatives in Over 30 Principal Cities.

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LUBRICATION

"Friction, Lubrication, Fats and Oils", by Emil P. Dieterichs, is an inexpensive little book that contains valuable information on the manufacture of lubricating oils, solid lubricants and greases, together with numerous formulas; modes of testing oils and the application of lubricants.

Send us your check for $1.50 and we will mail a copy of it to you.

National Petroleum News
802 Caxton Bldg., Cleveland, Ohio

New Publications

Probably one of the most useful reference books of recent years to men whose interests lie along the lines of utilization of coal for all industrial purposes, is "The International Conference on Bituminous Coal". The book holds considerable interest for oil technologists as well as coal men.

The book is the report of the proceedings at the conference which was held at Carnegie Institute of Technology, Pittsburgh, Nov. 15-18, 1926. It is published by Carnegie Institute under the auspices of Dr. Thomas Stockham Baker, president of the institute and the moving spirit in the planning and carrying out of the conference.

The volume contains in full all the papers that were delivered at the conference and is the first time such a mass of information on the various phases of coal utilization and coal technology have been brought together.

Coal in these papers is treated from the straight combustion standpoint, from the gas manufacturer's stanpoint, from the standpoint of high and low temperature distillation and from the standpoint of synthesizing alcohols and motor fuels.

* * *

Book for Exporter Published

WASHINGTON, May 7.—An indexed guidebook for the American exporter has just been published by the Foreign Commerce Department of the Chamber of Commerce of the United States. The publication is entitled "Doing Export Business" and discusses in its 64 pages the procedure necessary in carrying on an export business. Price of the book is 15 cents per copy.

MINNEAPOLIS, MINN. — Due to heavy rains generally in southern Minnesota, the roads have been all but impassable, but oil jobbers optimistically look forward to a prosperous season, according to J. W. Ferman, sales representative for H. K. Stahl Co.

MINNEAPOLIS, MINN.—Maynard Johnson, formerly of the Twin Cities staff of H. K. Stahl Co., has leased the bulk and service station of the Home Oil Co. at Estherville, Ia. Trophy motor and tractor oils of the Stahl company will be handled.

FLINT, MICH.—Additions to all departments are being made by the Lincoln Petroleum Products Co. here, including its office, warehouse and garage, to handle increased business, according to Charles C. Tucker, general manager.

FLUSHING, MICH. — A battery charging outfit was added to the main service station of the Central Gas & Oil Co. here last December, which has proven a success, according to T. G. Bedford, proprietor of the company.

Serving Jobbers

not Competing with them

BECAUSE we operate no bulk or retail stations we are entirely dependent on the good will of jobbers. Naturally you can expect the very best service within our power to give.

Your entire range of needs is met by quality products from our two modern refineries.

Ask for sample of our special 60-62, Anti-Knock, *blue color* Gasoline.

Write or Wire

TIDAL REFINING COMPANY

TIDAL BUILDING

TULSA, OKLAHOMA

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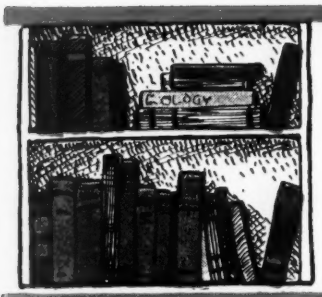


Oil Man's Bookshelf

DID you ever stop to realize that there is a bigger job *awaiting your ability to handle it?*

And the way to develop that ability is to *study books* devoted to your particular branch of the oil business!

Here in the OIL MAN'S BOOKSHELF you will find books on oil that you can read with the greatest profit—whether you are in producing, refining, natural gasoline or marketing divisions of the industry. If you do not find the subjects you are interested in, write us.

MATHEMATICS for ENGINEERS

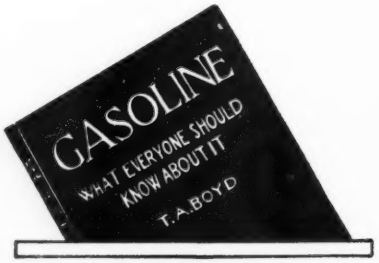
By Raymond W. Dull

"MATHEMATICS for Engineers" by Raymond W. Dull, research engineer of the Link-Belt Co., Chicago, is a practical treatise on mathematics for (1) engineers who want a quick and convenient reference; (2) engineers who have grown somewhat rusty in their mathematics; (3) engineers who feel the need of a text for the study of mathematics.

The book is a mature explanation for practicing engineers of those principles, methods and phases of mathematics that are most used by engineers every day.

Simple numeric computations, algebra, geometry, trigonometry, differential calculus, integration and summation are covered so that the book includes practically every phase of mathematics used by engineers, and in such form that it is unnecessary for the engineer to work out intermediate steps to get what he is after.

780 pages—price $5.00



This is the complete story of *"Gasoline"* told in popular language, and written by an authority on the subject of its use in motor cars—T. A. Boyd, head of fuel oil section, General Motors Research Corp.

What gasoline is, where it comes from, its properties, what distinguishes good gasoline from bad, how the motorist can get more miles out of a gallon, and help in the economy of this important fuel—all these facts are given in chatty, non-technical style and profusely illustrated.

***"Gasoline"* is a message to the public that has so often been recommended to the oil industry. Every man engaged in the making and distributing of motor fuel should read it.**

206 pages—popularly priced at $2.50.

OIL AND GREASE FORMULAS

By Forrest A. Hoff

200 guaranteed formulas, with instructions for their use, by Forrest A. Hoff, consulting lubricating engineer.

Recommended to the jobber who wants to make and sell his own line of grease and oil.

The set consists of a compounding chart, Key to Formulas and a Book of Instructions—all arranged with a system of keying that insures secrecy by controlling the compounding from the office, the plant employees working with a series of numbered oils.

For the jobber who plans to make and sell his own line of oils and greases, these tested and proved Formulas will save him money.

200 Formulas complete—price $15

-Cut out and mail-

National Petroleum News,
898 Caxton Bldg., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $_____

- ☐ **Mathematics for Engineers by R. W. Dull—$5.**
- ☐ **Gasoline by T. A. Boyd—$2.50.**
- ☐ **Oil and Grease Formulas by F. A. Hoff—$15.**

NAME _____

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ON THE LAZY BENCH

National Petroleum News

Only One Thing on His Mind

RELATIVE to the present hunger of land-owners in the territory around Seminole for bonuses, Walter W. Fleming, vice-president of the Mid-Kansas Oil & Gas Co., contributes this story:

A scout was driving through a part of the country southwest of Seminole and got onto a road with which he was not familiar. He hailed an elderly farmer at work in a garden patch.

"How far is it to Shawnee?", asked the scout.

Cupping his hand behind his ear, the hard-of-hearing old man replied:

"Fifty dollars an acre."

"I didn't ask about leasing, I want to know how far it is to Shawnee," said the scout.

"Wouldn't take a damn cent less," the farmer retorted.

—Lawrence E. Smith

◈ ◈ ◈

Do You Know These Answers If So, Why?

By what per cent has the use of automobiles increased since the spring of 1869?

How high above the sea level is a 110-foot derrick?

At what time in the morning do you have to get downtown to find a parking place?

Who invented free air for filling stations?

When was the last gusher brought in?

Who is the patron saint of the oil industry in Congress?

How long would a 55 tank of corn likker last in Borger? In Amarillo? In Tonkawa?

How tall is Herk U. Lee?

Herk U. Lee's Log Book

◈ ◈ ◈

The Old Man Again

Henry Smith's two small boys, aged seven and nine, were discussing the much-mooted possibilities of visiting warmer but less comfortable regions when this sojourn shall have ended.

"Do you believe in the devil?" the younger one asked with awe and respect.

"Naw," said the worldly nine-year old with complete confidence and a slight sneer, "he's the same as Santa Claus; he's yer father."

—Leaderite

◈ ◈ ◈

His Medal

"What did the boss say to you for being late on Friday?"

"He gave me the D. C. M."

"What's that?"

"Don't come Monday!"

—The Pure Oil News

A New Approach

Seminole, according to Ralph Steinman, gets more peculiar each day. He refers not to the vagaries of the wells but to the population of the district. The drifters and the "moochers" have come in by the hundreds and their nerve is a thing to marvel at.

Steinman, who sells tanks for the Drane Tank Co. and spends much time in the Seminole country, tells of a new line of attack with himself as the victim. He was sitting in the lobby of one of Seminole City's hotels peacably reading the morning paper when one of the unwashed floaters drew alongside his chair.

"Pardner," said the intruder, "I got a letter here and I have it all finished but one page; would you let me borrow your glasses?"

—Lawrence E. Smith

◈ ◈ ◈

Results

The story is being told of a driller who was showing a salesman from an eastern manufacturer the sights of Borger. Stopping at the head of an alley the driller explained that due to the arrangements of adjoining buildings a message spoken into the alley would be returned ten seconds later in the form of an echo.

"Say, 'two quarts'," whispered the native.

After doing so and waiting for a full minute the salesman turned and said that he had heard nothing.

"Well, never mind," answered the driller, "here comes the two quarts."

Herk U. Lee's Log Book

◈ ◈ ◈

If You Know What We Mean

Memphis, Birmingham, Jackson and Muscle Shoals district have their eyes on the development of this section as a gas or oil field. It will mean much to these centers in the way of reduction of living expenses and a greater possibility of increasing the payrolls.

—Alabama Oil and Mineral News

◈ ◈ ◈

An Aberdonian and his daughter took up golf. At the close of a game the father was laid a dead stymie, while the daughter had one to play to win the match. Turning around to her, he said, "Jeannie, isn't the morn yer birthday?"

"Yes, father."

"Ah, well," he said, "I'll gie ye that hole for a present."

— Skelly News

New Box Type Case

Completely equipped with bottles and jars . . . $15.75

269—A real oil sales case, covered with smooth black cowhide. Lined with red velvet. Case contains fourteen 4-ounce bottles and ten ½-ounce squat grease jars held in position by adjustable bars. Bottles are partitioned separately.

Less 10% for Cash
Other styles in our FREE Catalog

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Auto Truck Equipment Company, Pittsburgh, Pa.; Baker Equipment Engineering Co., Richmond, Va.; E. Chope & Son, Detroit, Mich.; F. A. Carvin & Company, Toledo, O.; Crescent Truck Equipment Co., New Orleans, La.; Cruse-Crawford Mfg. Co., Birmingham, Ala.; Darien Body Works, Philadelphia, Pa.; Dayton Wood Products Co., Dayton, O.; The Herman Body Co., St. Louis, Mo.; Houston Trailmobile & Equipment Co., Houston, Tex.; Interboro Hoist & Body Corp., Long Island City, N. Y.; James & Graham Wagon Company, Memphis, Tenn.; Leland Truck Equipment Company, Tulsa, Okla.; Leland Truck Equipment Company, Dallas, Tex.; Lewis & Walther, Little Rock, Ark.; A. J. Monday Company, Milwaukee, Wis.; Peters Auto Body & Spring Wks., Baltimore, Md.; Wm. Schukraft & Sons, Chicago, Ill.; Bruce H. Seabright, Wheeling, W. Va.; A. C. Schodorf & Son, Columbus, O.; The Truck Engineering Co., Cleveland, O.; Truck Equipment Company, Indianapolis, Ind.; Truck Equipment Company, Buffalo, N. Y.; Universal Hoist & Body Co., Everett, Mass.; Fred W. Upington, Lexington, Ky.; Frank W. Weber & Co., Louisville, Ky.; Witt-Will Company, Inc., Washington, D. C.; Wood Hydraulic Hoist & Body Co., Jacksonville, Fla.

We shall be glad to tell you why!

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The Highland Body Mfg. Co.
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This SIGN will increase your gallonage

IT'S not only what this sign says that counts so much—*but what it means!*

As soon as you display this sign of the "Authorized Opaline Dealer", you sell motor oil by the commonsense method which gives motorists *correct lubrication* and maintains your PRESTIGE in SERVICE.

The Sinclair method of recommending the right grade of Opaline is a simple one—an exclusive one—and *it is correct!* It is based on the Sinclair Law of Lubrication. It provides Opaline in several grades to fit the degree of wear in a motorist's engine as indicated by the *mileage on the speedometer.*

Opaline and this method are worth knowing about—and thinking about. May we tell you about this successful method of selling *correct lubrication* with the full line of Opaline Motor Oils?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

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Refinery - Tank Wagon Markets

National Petroleum News

Buying of Gasoline, Kerosene, Gas Oil Increases in Mid-Continent

Staff Special

TULSA, May 7

GOOD movement of refined gasolines, natural gasolines, and light burning oils, particularly kerosene, resulting in price advances of 0.25 to 0.375 cent a gallon for these oils, lent a more optimistic tone to Mid-Continent refinery markets this week than has existed for some time past. Magnolia Petroleum Co. also advanced its posted prices for Oklahoma, Kansas and Texas crude oil 10 cents a barrel. This advance was looked on by the trade as an indication that the refined market trend soon would be upward.

The crude price advance by Magnolia is not wholly credited with having given refinery markets the better position they attained this week. Magnolia's new prices were not announced until Thursday, whereas both refined and natural gasolines began their upward swing Tuesday. Jobbers' leaders are quoted as saying Magnolia's move was a constructive one and likely forecast a market rally.

Natural gasolines this week came out of their shells and showed some real activity. Two days of heavy trading, comparatively speaking, were experienced. Thursday five manufacturers that have offices in Tulsa, sold in the neighborhood of 250 cars of grade AA for export and in the following two days domestic demand increased considerably. The export business was placed at 5 cents a gallon and the sellers had the option of moving the material from their plants immediately or over May.

One manufacturer Thursday sold 25 cars of grade AA at 4.75 cents which was more or less the governing factor in making a flat 4.75-cent market for that day. Spot orders continued to come in and prices were advanced. Today 72 cars of grade AA sold at 5 cents a gallon for spot shipment. Grade BB, taking the week as a whole, was not as active as the AA grade. Demand for this grade was good, however, and prices advanced as the orders picked up.

Grade BB opened the week at 4.25 cents. Today 20 cars sold at 4.375 cents and 16 cars brought 4.50 cents. Grade C did not keep up with the higher grades on account of warmer weather. A five-car order for this grade brought 4.25 cents today which represents a 0.25-cent increase over Monday's price.

The refined gasoline market in Oklahoma more than kept up with the pace it struck last week and NATIONAL PETROLEUM NEWS' estimate that Oklahoma refiners alone sold 1000 cars of gasoline is considered conservative by the trade in Tulsa. This estimate, as in the case of last week's estimate, includes gasoline moving on the spot market only. The bulk of this 1000 cars was sold to the jobbing trade, with 58-60 U. S. Motor gasoline early in the week selling at 6.25 to 6.50 cents. Toward the end of the week most sales of this grade to the jobbing trade were at 6.50 cents. One refiner, however, reported selling approximately 160 cars of the 58-60 U. S. Motor to resale agents at 6.25 and 6.375 cents Wednesday and Thursday.

Higher gravity gasolines in Oklahoma showed little change from the week before. The 64-66, 390 end point and 64-66, 375 end point grades fluctuated around 7 cents, the former closing at this price Saturday and the latter closing at 7 to 7.25 cents. Only occasional sales of these gasolines were reported during the week. A refiner reported on Saturday that a buyer had turned down 10 cars of 64-66, 390 end point gasoline at 7 cents, claiming he could buy it for 6.875 cents elsewhere. Sale at the latter price could not be confirmed.

"Sale of 25 cars of 64-66, 375 end point gasoline at 6.875 cents was the only thing that served to break the monotony of the gasoline market," a north Texas refiner reported today. Aside from this sale, north Texas refiners reported only occasional sales of any grade of gasoline this week with the result that prices were virtually the same as a week ago. The 58-60 U. S. Motor grade was quoted 6.25 to 6.375 cents.

The kerosene market was quiet until several large refiners, who preferred to store their output and purchase their requirements, began to buy. Friday and Saturday one large Oklahoma refiner reported purchases of 150 cars of 41-43 water white kerosene mostly from Oklahoma refiners. Only 10 cars were purchased in Shreveport and 10 cars in Wichita Falls. Most of the stuff is for over May shipment. The quantity which is to be shipped promptly, cost the buyer 4.25 cents. He paid 4.375 cents for that which will be shipped later. North Texas refiners who last week reported an improvement in their kerosene market, stated today that they were behind on shipments and orders kept coming in.

The purchase of 30,000 barrels of fuel oil at 80 cents a barrel in north Texas last week brought railroads and several other large buyers into the market this week. Most of the buying was for shipment over the rest of May. The price was 80 cents a barrel. The lowest price for which spot 24-26 fuel oil sold was 85 cents per barrel, however.

Heavy oils in Oklahoma changed little in price.

Supplementing last week's report that an Oklahoma refiner had sold 1,260,000 gallons of 32-36 dark gas oil to a Chicago marketer at 2.375 cents a gallon for shipment up to July 1, it was learned this week that a Kansas refiner sold a similar quantity of gas oil to the same buyer on the same terms. Gas oil this week for spot shipment was not available at 2.50 cents; several buyers reported that only scattered cars of 32-36 gravity oil could be picked up at 2.625 cents.

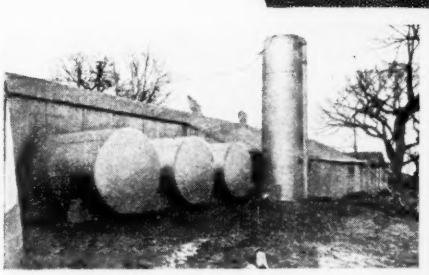
Refiners' price lists for cylinder stocks and neutral oils showed little change this week. One or two grades of neutrals were quoted slightly lower, while prices on others were advanced 0.25 to 0.50 cent.

A few small sales of 124-126 white crude scale wax at 2.75 cents per pound were reported this week.

French Buy Russian Gasoline

CLEVELAND, May 7.—The principal importer of Russian oil in France, La Petrofina Francaise, has contracted to receive from the Syndicat du Naphte Russe in 1927 40,000 metric tons of light gasoline, 100,000 metric tons of heavy gasoline and 30,000 tons of lubricating oils, according to Commerce reports, published by the U. S. Department of Commerce. In 1928 the French importer is to receive 50,000 tons of light gasoline, 130,000 tons of heavy gasoline and 35,000 tons of lubricating oils. A metric ton is approximately seven barrels. Last year the French importer received 31,500 tons of light and 58,500 tons of heavy Russian gasoline.

Limited Boiler Capacity?

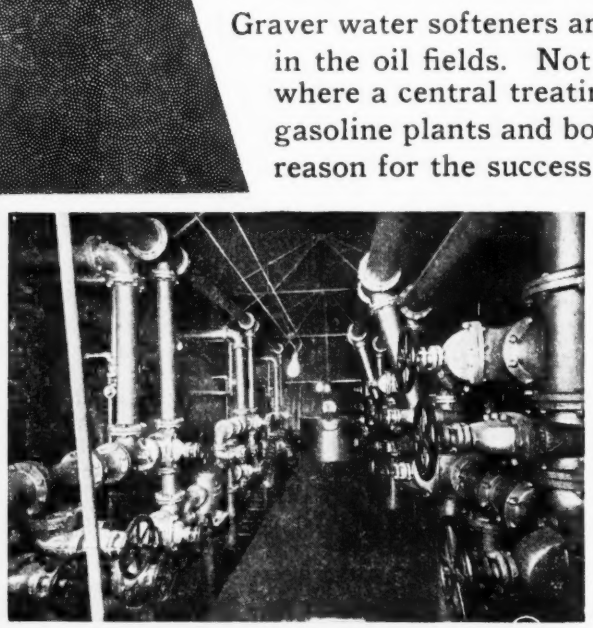


Does it ever happen that it was necessary for you to cut down production because of limited steam capacity? Or, do you ever have to rearrange your schedule because boilers have to be down for cleaning? Or do your steam stills ever "plop" because of water slugs in the steam?

Your present water supply properly softened will stop all these troubles. You will be able to work your boilers to higher ratings and only take them out of service for the occasional inspections. The water will not foam, which with steam stills is mighty important.

Another item is the source of water. Perhaps your present supply is not as ample as you wish—or it may cost considerable. With proper softening equipment you can very often use water costing you but the pumping but which would be useless without treatment.

Graver water softeners are working successfully everywhere in the oil fields. Not only in boiler plants but in the field where a central treating plant will supply water for natural gasoline plants and boilers used in drilling operations. One reason for the success of Graver softening plants is the fact that by building all of the various types of softeners Graver is able to recommend the correct type or a combination of types.



The cost of correct softening equipment is small even when its savings are not considered. But there is scarcely an installation of, a Graver softener which has not paid its cost at least once during the first year of use.

We will be glad to study your water situation with you.

GRAVER *Founded 1857* ***Corporation***

EAST CHICAGO, INDIANA

NEW YORK	CHICAGO	TULSA	HOUSTON
Grand Cent. Term.	America Fore Bldg.	Atlas Life Bldg.	West Building

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ sign is shown

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices May 9	Prices May 2	Prices Apr. 25
52-54 Naphtha	9.00 -10.00	9.00 - 9.50	9.00 -10.00
54-56 Naphtha	9.00 -10.00	9.25 - 9.75	9.25 -10.00
58-60 Gasoline	8.75 - 9.00	9.00 - 9.25	8.75 - 9.25
60-62 Str.-run gasoline	9.25 -10.00	9.50 -10.50	9.50 -11.00
64-66 Str.-run gasoline	9.75 -10.50	9.75 -11.00	10.00 -11.00
68-70 Str.-run gas. 350-360 E.P.	10.50 -11.50	10.50 -11.50	10.50 -11.50
68-70 Str.-run gas. 305-320 E.P.	-18.00	18.00 -18.25	15.50 -18.00
OKLAHOMA			
48-50 450 E. P. naphtha	- 6.25	6 - 6.25	6.00 - 6.25
50-52 450 E. P. naphtha	- 6.25	6 - 6.25	6.00 - 6.25
56-58 450 E. P. gasoline	- 6.25	6 - 6.25	-†6.00
56-58 U.S. Motor 437 E.P.	††- 6.25	††- 6.25	- 6.25
58-60 450 E. P. gasoline	†- 6.25	-†6.25	-†6.00
58-60 U. S. Motor 437 E. P.	- 6.50	6.25 - 6.50	6.25 - 6.50
60-62 437 E. P. gasoline	-*6.50	-*6.50	- 6.50
60-62 400 E. P. gasoline	- 6.75	- 6.75	6.50 - 6.75
64-66 390 E. P. gasoline	- 7.00	- 7.00	6.875- 7.00
64-66 375 E. P. gasoline	7.00 - 7.25	7.00 - 7.25	7.00 - 7.125
68-70 350-360 E. P. gas	7.50 - 7.75	7.50 - 7.75	7.625- 7.75

†Prices Nominal. ††Only one refiner quoting. *Quotation only.

KANSAS*			
58-60 U.S.Motor 437 E. P.	6.75 - 7.00	6.75 - 7.00	6.75 - 7.00
60-62 400 E.P.gasoline	7.00 - 7.25	7.00 - 7.25	- 7.25
64-66 375 E. P. gasoline	7.50 - 7.75	7.50 - 7.75	- 7.75

*F. O. B. refinery Kansas destination.

NORTH TEXAS			
48-52 450 E. P. naphtha	-†6.00	-†6.00	-†6.00
56-58 450 E. P. gasoline	-†6.00	-†6.00	-†6.00
58-60 450 E. P. gasoline	- 6.00	- 6.00	- 6.00
56-58 U. S. Motor 437 e. p.	††6.125- 6.25	††- 6.125	††- 6.125
58-60 U. S. Motor 437 e. p.	6.25 - 6.375	6.25 - 6.375	6.25 - 6.375
64-66 390 E. P. gasoline	- 6.75	-*6.75	*- 6.75
64-66 375 E. P. gasoline	6.875- 7.00	*6.875 - 7.00	*- 7.00
68-70 350-360 E. P. gasoline	†7.25 - 7.50	*7.25- 7.50	*- 7.50

†Prices nominal. ††Only one refiner quoting. *Quotations only.

NORTH LOUISIANA			
58-60 U. S. Motor 437 E. P.	- 6.50	- 6.50	6.25 - 6.50

ARKANSAS			
56-58 450 E. P. gasoline	- 6.25	- 6.25	- 6.25
58-60 450 E. P. gasoline	- 6.25	- 6.25	- 6.25
58-60 U. S. Motor 437 E. P.	6.75 - 7.00	- 6.75	6.50 - 6.625

CALIFORNIA			
*54-58 U. S. Motor 437 E.P.	8.00 -11.50	5.50 - 6.00	5.50 - 6.00
*58-60 U.S. Motor 437 E.P.	9.00 -12.50	6.50 - 7.50	6.50 - 7.50
*42-45 Eng. dis. 445-480 E.P	7.00 - 7.50	5.00 - 5.50	5.00 - 5.50

*2c tax to be added if used in state.

NEW ENGLAND (F. O. B. Boston and Fall River)			
58-60 U. S. Motor gas	-10.25	-10.25	-10.25

NATURAL GASOLINE

(Note: End point of all grades, not over 375°F.)

OKLAHOMA			
Grade AA,80-87.9,90% Rec	- 5.00	4.625- 4.75	- 4.50
Grade A,72-79.9,90% Rec.	- 5.00	4.625- 4.75	†4.625- 4.75
Grade BB,84-92,85% Rec.	4.375- 4.50	- 4.25	4.125- 4.25
Grade B,76-83.9,85% Rec.	4.375- 4.50	- 4.25	- 4.25
Grade C,80-90,78% Rec	*4.125- 4.25	- 4.00	- 4.00

†Prices Nominal. *Quotation only.

NORTH LOUISIANA			
*Grade AA	5.00 - 5.25	4.75 - 5.00	- 4.75
*Grade BB	4.50 - 4.625	- 4.50	- 4.50
*Grade C	- 4.375	- 4.25	- 4.25

*F. O. B. Monroe District.

NORTH TEXAS			
*Grade AA,80-87.9,90% Rec	- 5.00	4.625- 4.75	- 4.50
*Grade A,72-79.9,90% Rec.	- 5.00	4.625- 4.75	†4.625- 4.75
*Grade BB,84-92,85% Rec.	4.375- 4.50	- 4.25	4.125- 4.25
*Grade B,76-83.9,85% Rec.	4.375- 4.50	- 4.25	-†4.25
*Grade C,80-90,78% Rec.	†4.125- 4.25	4.00 - 4.125	-†4.00

*F. O. B. Breckenridge.
†Prices nominal.

CALIFORNIA			
75-85, 375-390 E. P. blend	5.50 - 7.00	5.50 - 7.00	5.50 - 7.00

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 E.P.	9.00 - 9.50	9.00 - 9.50	9.00 -10.00
64-66 Blend 437 E.P.	9.00 - 9.50	9.00 - 9.50	9.00 -10.00
60-62 Blend 437 E.P.	9.00 - 9.50	9.00 - 9.50	9.00 -10.00

OKLAHOMA			
64-66 Blend 437 E.P.	6.125- 6.25	6.00 - 6.125	- 6.125

BURNING OILS

PENNSYLVANIA			
45 w. w. kerosene	6.625- 7.00	6.75 - 7.00	6.875- 7.25
46 w. w. kerosene	7.25 - 7.50	7.25 - 7.50	7.375- 7.50
47 w. w. kerosene	7.50 - 8.00	7.75 - 8.25	7.75 - 8.00

OKLAHOMA			
41-43 w. w. kerosene	4.375- 4.50	4.125- 4.25	4.125- 4.375
42-44 w. w. kerosene	- 4.75	- 4.50	4.50 - 4.75

KANSAS			
41-43 w. w. kerosene	5.25 - 5.50	5.00 - 5.50	5.00 - 5.50
42-44 w. w. kerosene	5.50 - 5.75	5.25 - 5.75	- 5.75

NORTH TEXAS			
40-42 w. w. kerosene	- 3.875	- 3.75	- 3.75
41-43 w. w. kerosene	4.00 - 4.25	3.875- 4.00	3.75 - 4.00

†Prices nominal.

NORTH LOUISIANA			
41-43 w. w. kerosene	4.50 - 4.75	4.50 - 4.75	4.50 - 4.75

ARKANSAS	Prices May 9	Prices May 2	Prices Apr. 25
41-43 w. w. kerosene	4.75 - 5.00	4.75 - 5.00	4.75 - 5.00

CALIFORNIA			
38-40 w. w. kerosene	5.50 - 6.00	5.50 - 6.00	5.50 - 6.00

NEW ENGLAND			
**40-43 w. w. kerosene	- 7.50	- 7.50	- 7.50

**Only one refiner quoting.

NEUTRAL OIL

PENNSYLVANIA (Viscosity at 70° F.)			
Vis.			
200 No. 3 Assoc. Filt	$3.50 -$4.00	†$3.50 -$5.00	†$3.00 -$4.00
180 No. 3 Assoc. Filt	†$0.00 -$1.00	†$0.50 -$1.00	†$0.50 -$1.00
150 No. 3 Assoc. Filt	$8.00 -$8.50	-$8.00	†$8.00 -$8.25
(Non-Viscous)			
34 Grav. 330-340 Flash	7.25 - 8.00	7.25 - 8.00	7.50 - 8.00
36 Min. Neut. 300-305 Flash	6.50 - 7.50	6.50 - 7.50	6.50 - 7.50

†Prices Nominal.

OKLAHOMA (Viscosity at 100° F.)			
Vis. Color			
100—No. 2	5.75 - 7.50	5.75 - 6.50	6.00 - 6.50
150—No. 3	8.25 - 8.75	- 8.50	- 8.50
150—No. 4	8.00 - 8.25	8.00 - 8.25	8.00 - 8.25
180—No. 3	9.50 -10.25	9.50 -10.50	9.50 -10.50
180—No. 4	- 9.75	- 9.75	- 9.75
180—No. 5	9.50 - 9.75	9.25 - 9.75	9.25 - 9.50
200—No. 3	10.00 -11.00	10.00 -11.00	10.50 -11.00
200—No. 4	10.50 -10.75	10.50 -10.75	10.50 -10.75
200—No. 5	9.00 -10.50	9.00 -10.50	9.00 -10.50
220—No. 3	12.50 -13.50	12.50 -13.50	12.50 -13.50
220—No. 4	12.25 -12.50	12.25 -12.50	12.25 -12.50
220—No. 5	11.50 -12.00	11.50 -12.00	11.50 -12.00
240—No. 3	14.00 -15.00	14.00 -14.50	14.00 -14.50
240—No. 4	-13.50	-13.50	-13.50
240—No. 5	12.00 -13.00	12.00 -13.00	12.00 -13.00
280—No. 3	16.00 -17.00	16.00 -17.00	16.00 -17.00
280—No. 4	-15.25	-15.25	-15.25
280—No. 5	14.00 -15.00	14.50 -15.00	14.50 -15.00
300—No. 5-6	-17.00	-17.00	-17.00

GULF COASTAL (Viscosity at 100° F; pour test 0)			
Vis. Color			
100—No. 2 Unfilt. Pale	7.50 - 8.50	7.50 - 8.50	7.50 - 8.50
200—No. 3 Unfilt. Pale	10.50 -11.50	10.50 -11.50	10.50 -11.50
300—No. 3 Unfilt. Pale	11.50 -12.50	11.50 -12.50	11.50 -12.50
500—No. 3½ Unfilt. Pale	13.50 -14.50	13.50 -14.50	13.50 -14.50
750—No. 4 Unfilt. Pale	16.00 -16.50	16.00 -16.50	16.00 -16.50
200—No. 5½ Red Oil	8.50 - 9.50	8.50 - 9.50	8.50 - 9.50
300—No. 5½ Red Oil	10.00 -11.00	10.00 -11.00	10.00 -11.00
500—No. 6 Red Oil	11.50 -12.50	11.50 -12.50	11.50 -12.50
750—No. 6 Red Oil	14.50 -15.50	14.50 -15.50	14.50 -15.50

CALIFORNIA (Viscosity at 100° F.)			
Vis. Color			
100—No. 2	9.00 - 9.50	9.00 - 9.50	9.00 - 9.50
100—No. 3	7.50 - 8.00	7.50 - 8.00	7.50 - 8.00
200—No. 3	9.50 -10.00	9.50 -10.00	9.50 -10.00
300—No. 3	10.50 -11.00	10.50 -11.00	10.50 -11.00
450—No. 3-3½	13.00 -13.50	13.00 -13.50	13.00 -13.50
550—No. 3-3½	14.50 -15.00	14.50 -15.00	14.50 -15.00
600—No. 3-3½	15.00 -15.50	15.00 -15.50	15.00 -15.50
100—No. 5	- 6.50	- 6.50	- 6.50
200—No. 5	8.00 - 8.50	8.00 - 8.50	8.00 - 8.50
300—No. 5	9.00 - 9.50	9.00 - 9.50	9.00 - 9.50
400—No. 5	11.00 -11.50	11.00 -11.50	11.00 -11.50
500—No. 5	11.00 -11.50	11.00 -11.50	11.00 -11.50
600—No. 5	12.00 -12.50	12.00 -12.50	12.00 -12.50
700—No. 7	14.00 -14.50	14.00 -14.50	14.00 -14.50

CYLINDER STOCKS

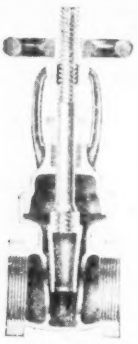
OKLAHOMA			
190-200 Vis.at210°Brt.St.	31.00 -32.00	30.00 -32.00	30.00 -32.00
150-160Vis.at210°Brt.St.	26.00 -28.00	26.00 -28.00	26.00 -28.00
600E.St.140-150Vis.—210°	17.00 -18.00	-18.00	-18.00
600St.Ref.OliveGreen	9.00 -10.00	9.00 -10.00	9.00 -10.00
600St.Ref.DarkGreen	7.00 - 7.25	6.00 - 7.00	6.00 - 7.00
BlackOil	4.75 - 5.00	4.75 - 5.00	4.75 - 5.00

PENNSYLVANIA (1-inch Immersion Test)			
600 Steam Refined	9.00 -10.00	9.50 -11.00	10.00 -11.00
650 Steam Refined	12.00 -14.00	13.00 -14.50	12.50 -14.50
600 Flash	15.00 -18.00	18.00 -18.50	18.00 -19.00
625 Flash	28.00 -29.00	28.00 -29.00	28.00 -29.00
600 Warren E	19.00 -20.00	19.50 -20.50	19.50 -20.00
600 Oil City E	17.50 -18.50	18.00 -19.00	18.00 -18.50
600 D Filtered	25.00 -26.00	25.50 -26.00	25.50 -26.00
ColdTestStocks (brt. filt)	33.00 -34.00	33.50 -35.00	34.00 -35.00
Cold Test Stock (dark filt)	30.00 -32.00	31.00 -32.50	31.00 -33.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher.)

LONG RESIDUUM STOCKS

PENNSYLVANIA			
60-65 vis. @ 210, 440-450 flash No. 5½ color	33.00 -34.00	33.00 -34.00	33.00 -34.00
70-75 vis. @ 210, 450-455 flash No. 6 color	34.00 -35.00	34.00 -35.00	34.00 -35.00
80-85 vis. @ 210, 440-450 flash No. 7 color	35.00 -36.00	35.00 -36.00	35.00 -36.00
80-85 vis. @ 210, 450-460 flash No. 7-8 color	36.00 -37.00	36.00 -37.00	36.00 -37.00
80-85 vis. @ 210, 460-465 flash No. 7 color	37.00 -38.00	37.00 -38.00	37.00 -38.00
95-100 vis. @ 210, 490-495 flash No. 8 color	-39.00	-39.00	-39.00



Sectional view Fig. 368, screwed Jenkins Standard Bronze Gate Valve, with yoke, outside screw, and rising spindle.

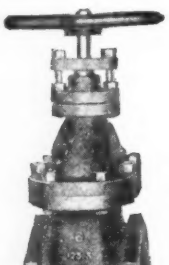


Fig. 325
Screwed, Jenkins Standard Iron Body Gate Valve

Make sure your gate valves are oil-tested

When so ordered, Jenkins Gate Valves may be supplied specially packed for oil and specially tested in actual oil service.

This is in addition to the double test which is given to every Jenkins Gate Valve. Every valve is tested on each side of the double-faced wedge and must make good under higher-than-recommended pressures before it is allowed to leave the Jenkins factory.

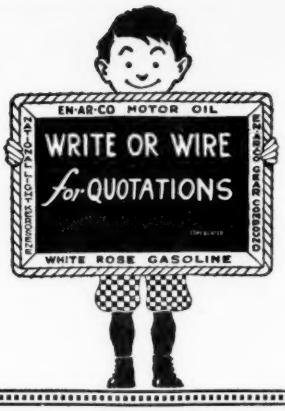
Jenkins oil-tested gate valves are obtainable through supply houses everywhere.

JENKINS BROS.

80 White Street . . . . New York, N. Y.
524 Atlantic Avenue . . . . Boston, Mass.
133 No. Seventh Street . . Philadelphia, Pa.
646 Washington Boulevard . . Chicago, Ill.

JENKINS BROS., Limited
Montreal, Canada *London, England*

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864



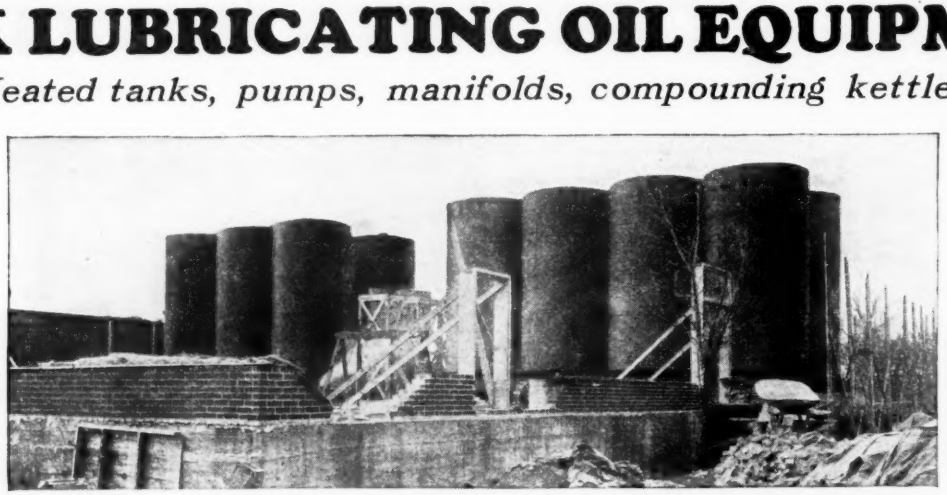
The
NATIONAL REFINING COMPANY
PETROLEUM PRODUCTS

THREE MODERN REFINERIES:
Marietta, Ohio Refinery
operated on Pennsylvania Crude
Findlay, Ohio Refinery
operated on Ohio Crude
Coffeyville, Kansas Refinery
operated on Midcontinent Crude

National Headquarters
NATIONAL BLDG., CLEVELAND, O.

BULK LUBRICATING OIL EQUIPMENT

Heated tanks, pumps, manifolds, compounding kettles



Complete service for refiners or jobbers. Guarantee thickness material. Double Electric welded and oil tight. Let us help you solve your problem in handling lubricating oil, fuel oil, distillate, gasoline, and etc.

BROWN SHEET IRON & STEEL CO.

964 Berry Ave. **St. Paul, Minn.**

DON'T DELAY—SIGN THE COUPON AND LET US KNOW WHAT YOU WILL NEED.

Check Items on which you want prices.
Complete Bulk Station____ Number of Tanks____ Size____
Filling Station Tanks____ Size____ Pumps____
Truck Tanks____ Size____ Compts____
Other Equipment____
Name____ Address____

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ sign is shown

WAX

*PENNSYLVANIA	Prices May 9	Prices May 2	Prices Apr. 25
122-124 White Crude Scale.	2.75 – 3.00	– 3.00	3.25 – 3.50
124-126 White Crude Scale.	2.75 – 3.00	3.00 – 3.25	3.25 – 3.50
OKLAHOMA			
124-126 White Crude Scale.	– 2.75	– 2.75	2.75 – 2.90
CALIFORNIA			
White Crude Scale.....	6.00 – 7.00	6.00 – 7.00	6.00 – 7.00

*Per Pound, New York

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil.....	5.00 – 5.25	5.25 – 5.50	– 5.50
30-34 Fuel Oil.....	5.00 – 5.25	5.25 – 5.50	5.25 – 5.50
28-30 Fuel Oil.....	5.00 – 5.125	5.125– 5.50	5.125– 5.50
OKLAHOMA			
38-40 Straw distillate...	– 3.25	3.125–3.25	3.125– 3.25
36-38 Straw distillate...	– 3.00	–3.00	– 3.00
32-36 Gas oil cracked....	2.625– 2.75	–2.625	2.50 – 2.625
32-36 str. reduced Gas oil	– 2.75	2.625–2.75	2.625– 2.75
28-30 Fuel oil (Bbl.).....	$ .95 – 1.00	$.95 – .975	$1.00 – 1.05
26-28 Fuel oil (Bbl.).....	–$ .95	– .95	–$1.00
24-26 Fuel oil (Bbl.).....	–$ .925	– .925	$ .95 – .975
22-26 Fuel oil (Bbl.).....	$ .90 – .925	$.90 – .925	–$ .95
18-22 Fuel oil (Bbl.).....	–$ .90	– .90	–$ .90

†Prices nominal.

KANSAS*			
38-40 straw distillate...	– 3.75	– 3.75	– 3.75
36-38 straw distillate...	– 3.25	– 3.25	– 3.25
32-36 Gas Oil.....	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
24-26 Fuel Oil.....	$1.10 – 1.15	$1.10 – 1.15	$1.10 – 1.15
18-22 Fuel Oil.....	–$1.00	–$1.00	$1.00 – 1.05

*F. O. B. refinery Kansas destination.

NORTH TEXAS			
38-40 Straw distillate.....	– 3.00	– 3.00	– 3.00
32-36 Gas Oil (Gal.)cracked	– 2.50	– 2.50	– 2.50
32-36 uncracked gas oil....	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
24-26 Fuel per (Bbl.).....	$ .85 – .90	$ .875– .925	– $.95
GULF COASTAL			
Fuel.....	$1.60 – 1.65	$1.60 – 1.65	$1.60 – 1.65
Gas Oil.....	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75

NORTH LOUISIANA	Prices May 9	Prices May 2	Prices Apr. 25
32-36 Gas oil, cracked (Gal.).	2.75 – 2.875	– 2.75	– 2.75
32-36 Gas oil, uncracked (Gal)	3.00 – 3.125	– 3.00	– 3.00
16-20 Fuel Oil (Bbl.)...	$1.10 – 1.15	$1.10 – 1.15	$1.10 – 1.15
ARKANSAS			
28-32 Gas oil.....	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
32-36 Gas oil.....	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
*Smackover Crude Fuel	$1.10-1.15	–$1.15	–$1.15

*For unrestricted shipment.

CALIFORNIA*			
14-18 Fuel Oil (Bbl.)...	$ .75 – 1.00	$ .70 – 1.00	$ .70 – 1.00
14-18 Bunker Oil (Bbl.).	$ .75 – 1.00	$ .70 – 1.00	$ .70 – 1.00
30-34 Gas Oil (Bbl.)....	$1.00 – 1.05	$1.20 – 1.25	$1.20 – 1.25
27 + Diesel Oil (Bbl.).	$1.00 –$1.05	–$1.15	–$1.15

*(San Joaquin Valley, San Francisco 4c per bbl. more.)

NEW ENGLAND (F. O. B. Boston and Fall River)			
30-32 Gas Oil (Gal.).....	– 5.92	– 5.92	– 5.92
Fuel Oil (Bunker C) Bbl...	–$1.87	–$1.88	–$1.88

PETROLATUMS

PENNSYLVANIA (Cents Per Pound in Tank Cars)*			
Snow White.....	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
Lily White.....	– 6.25	– 6.25	– 6.25
Cream White.....	– 5.25	– 5.25	– 5.25
Light Amber.....	2.625– 2.75	2.625– 2.75	2.625– 2.75
Amber.....	2.375– 2.50	2.375– 2.50	2.375– 2.50
Red.....	– 2.125	– 2.125	– 2.125
Green No. 5 Color.....	– 1.50	– 1.50	– 1.50

*In barrels .75c a pound more, carlots.

PETROLEUM COKE

OKLAHOMA (Per ton in carlots)			
Lump.....	–$5.00	–$5.00	–$5.00
Breeze.....	– 2.00	– 2.00	– 2.00
Still Run.....	– 3.00	– 3.00	– 3.00

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

California Price War is Over; It Cost Refiners $5,000,000

LOS ANGELES, May 7

THE outstanding feature of the petroleum market in California the past week was the end of the gasoline price war, with the increase of the service station price of gasoline in the Los Angeles district of 6 cents, an increase of 4 cents in northern California and a 2½ cent increase in Oregon and Washington.

The tank wagon price remains 4 cents under service station. This made the service station price in Los Angeles 18½ cents, and 19 cents in San Francisco, both including tax of 2 cents.

There had been rumors of the settlement of the fight, brought about largely through the giving by some companies of 6-cent margins to the service station owner, against an official 4-cent margin. It is generally believed that those who signed contracts giving the dealer 6 cents profit will think twice in future when it comes to cutting prices.

One oil man with a mind for figures estimates that the refineries of the state, during the price war, lost about $5,000,000, figuring the difference between what they received for gasoline and what they should have received.

In connection with the increase in the price of gasoline May 4, F. C. van Deinse, vice president of the California Petroleum Corp. issued the following statement:

"The public is well aware of the unstable conditions existing in the California oil industry, and that the present situation, namely, overproduction and price demoralization, is casting an ever darkening shadow on the whole industrial structure of the Pacific coast.

"As a first corrective, it is imperative that prices shall be placed on an economically sound basis, and as a step forward in that direction, California Petroleum Corp. announces restoration of its March 1, 1927, schedule of retail prices for Calpet stations in all of the Pacific coast territory served by it."

The raising of the service station and tank wagon price of gasoline caused an increase in the price for gasoline in tank cars. The larger companies are asking 11½ cents in tank cars, while some of the smaller refineries are offering U. S. Motor at 8½ cents and up to the higher figure.

Export figures in bulk remain about the same, due to the fact that a raise of 2 or 3 cents would prevent California refiners from competing with the east coast.

It is true that the tanker charter rate is lower, but very few boats are available. They are now asking $1 to $1.10 a barrel for east coast trips from California ports. These figures are for either clean or dirty boats, and include Canal tolls.

There has been no apparent change in the fuel oil market, with the same quotations of 70 to 75 cents standing, for export in bulk. Other products than cased goods, are without material change, while cased goods are up only a few cents. The new gasoline prices have not been in effect sufficiently long for the trade to find out "Where it's at."

There has been some criticism of the 6-cent raise in gasoline in the Los Angeles district, it being claimed that the new price is the same that was in effect March 1, and attention is called to the fact that the price of crude has been greatly reduced since that time. It is now said that there should be a raise in the price of crude to make prices of the raw material and the finished product conform. But there apparently is no sign of a raise in crude prices.

Natural gasoline continues weak, in the face of a heavy production, with prices ranging from 5½ to 6½ cents.

Gasoline and Light Oils Stronger In Chicago Resale Market

Staff Special

CHICAGO, May 7.

AN upward trend on light oil prices in Chicago market, for the first time in five weeks, was recorded late this week. U. S. Motor gasoline, which sold at 6.25 to 6.50 cents Monday, was 6.375 to 6.50 cents Thursday, and closed at 6.50 to 6.525 cents. High test gasolines closed fractionally higher. Kerosene was up a quarter cent. Distillate and gas oil prices were firm. Fuel quotations were unsettled.

Gasoline and kerosene were in better demand late this week. Inquiries were more numerous and more sales were reported. Buying was not for large quantities, but trade reported more three, five and 10 car orders placed. Some sellers reported only a small increase in orders but had raised their quotations today. One carload marketer noted that today jobbers were buying 58-60 U. S. Motor gasoline at 6.50 cents who early in the week were not interested in a 6.25 cent price. One refiner, who sold at 6.50 cents over the week, reported it was easier to get that price in middle of the week than it had been seven days ago.

Trade reported highest gasoline demand had picked up late this week along with U. S. Motor. Over April, high test sales were few and scattered but all sellers today had some inquiries. Quotations were steady over the first part of the week, but prices at which sales were made late in the week were fractionally higher.

The 60-62, 437 e. p. gasoline was 6.375 to 6.50 cents until Thursday and closed at 6.625 cents; 60-62, 400 e. p. material was 6.75 cents and closed at 6.75 to 6.875 cents; 64-66, 375 e.p. gasoline was 7 to 7.25 cents early in the week, 7 to 7.125 cents Wednesday and 7.125 to 7.25 cents today; 68-70, 350-360 e. p. gasoline was steady at 7.50 cents through the week with some quotations today at 7.75 cents.

Weather conditions have cleared fields and brought a bigger kerosene consumption, trade reports, resulting in a better demand. One refiner during first few days was offering 41-43 w. w. kerosene over the month at 4 cents, Group 3; this material originating in Illinois for shipment to eastern portion of this marketing territory. Spot market early in the week was 4.125 to 4.25 cents. Thursday sales were made at 4.25 to 4.50 cents, and today the market ranged from 4.25 to 4.625 cents with bulk of movement at 4.50 cents.

Distillate prices strengthened, which the trade attributed to the higher kerosene market. The 38-40 straw distillate was 3.25 cents early in the week and offered at 3.125 to 3.25 cents Thursday. Today this market was firm at 3.25 cents. Gas oil was quiet during the week, both for prompt and for future. The 32-36 dark gas oil was 2.625 to 2.75 cents until Thursday and firmed at 2.75 cents today; 32-36 straw gas oil was quoted at 2.875 to 3 cents at the opening of the week and sales today were reported at 2.875 cents.

Chicago refinery sales office reported that much 32-36 dark gas oil had been moved at 2.375 cents to carload marketers and to industrial companies. Total quantity of material moved was not reported.

Fuel oils also were quiet this week. Future inquiries were not in large orders, and business was mainly in renewing current contracts. One marketer sold 35 cars of 18-22 fuel over May at $0.875. A refiner moved 18-22 fuel late this week at prices ranging from $0.875 to $0.925. Quotations for 28-30 fuel were $1.00; for 24-26 and 22-26 fuel $0.925 to $0.975; for 18-22 grade $0.95 to $0.95 in the forepart of the week and sales today were made at $0.875 to $0.925. Smackover was unchanged at $1.15. High water in Arkansas continued to make shipping difficult.

Showers for the first and last parts of next week are predicted for Standard Oil Co. of Indiana territory, with fair weather in the middle. Variable temperatures are forecast, around seasonal normal.

PLATT'S

OILGRAM

Petroleum Markets-Every Day

5 CRUDE CUTS IN 8 WEEKS

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Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of Kentucky—T.w. and s.s. prices gasoline reduced 2 cents, Tampa, to 16 and 19 cents, including tax, **April 27,** and reduced 2 cents, Atlanta, to 18 cents and 21 cents respectively, including tax, **May 3.**

Standard of Indiana—T.w. and s.s. prices gasoline reduced 2 cents, Mason City, to 16.5 cents and 18.5 cents respectively, **May 3**; 2 cents, Mankato, to 17.1 cents and 19.1 cents, **April 25**; 1 cent, Duluth, to 18.5 cents and 20.5 cents, **April 27.** The South Dakota points, not carried in the accompanying tank wagon table, were reduced May 7—Sioux Falls 2 cents, to 17.3 cents t.w., and 19.3 cents s.s., and Aberdeen 2.5 cents, to 18 cents and 20 cents. Pierre and Huron were unchanged.

Standard of California—T.w. and s.s. prices gasoline advanced 6 cents, Los Angeles and southern California; 4 cents San Francisco, Fresno and northern California; 2½ cents Oregon and Washington, and 2 cents Arizona and Nevada, all effective **May 4.**

Canada—T.w. and s.s. prices gasoline reduced 1 cent, through Canada generally, **May 2.**

Kerosene Changes

Magnolia Petroleum—Kerosene reduced 2 cents, Fort Worth, to 11 cents t.w., **May 3.**

Canada—Kerosene reduced 1 cent, generally through Canada, **May 2.**

* * *

S. O. Indiana Cuts Tankwagon Prices

CHICAGO, May 9.—On May 10 Standard Oil Co. of Indiana reduced tank wagon and service station prices of gasoline 2 cents throughout its territory, and kerosene 1 cent.

Last previous general change on gasoline was a 1 cent cut on March 1 and on kerosene from 4/10 to 1.5 cents on Jan. 12.

Benzol Prices Easier

NEW YORK, May 9.—Demand for motor benzol was a shade more active last week but prices were a trifle easier owing to the weakness in gasoline tankwagon prices. The majority of big benzol buyers who have not already contracted ahead are reluctant to do so now and are looking for lower prices.

The leading marketers however are still asking 23 cents a gallon for motor benzol in tankcars at the ovens although on a firm bid it is said that 22 cents can be done in some directions. Production of benzol is holding up well. Export demand however has slumped. The demand for pure and 90 per cent benzols has been lighter the past week.

EXETER, NEBR.—Dinneen Oil Co. has added another 12,000 gallon tank to its bulk plant here.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

These Prices In Effect May 9, 1927

S. O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	16	0	16	*	14
Newark, N. J.	16	0	16	18	14
Annapolis, Md.	16	4	20	*	14
Baltimore, Md.	16	4	20	23	10
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	12
Danville, Va.	16	4½	20.5	*	14
Norfolk, Va.	16	4½	20.5	23.5	14
Richmond, Va.	16	4½	20.5	23.5	14
Roanoke, Va.	16	4½	20.5	23.5	14
Petersburg, Va.	16	4½	20.5	23.5	14
Williamsburg, Va.	16	4½	20.5	*	14
Charleston, W. Va.	16	3½	19.5	22.5	14
Clarksburg, W. Va.	16	3½	19.5	22.5	14
Keyser, W. Va.	16	3½	19.5	*	14
Parkersburg, W. Va.	16	3½	19.5	22.5	14
Wheeling, W. Va.	16	3½	19.5	22.5	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	23	14
High Point, N. C.	16	4	20	*	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	20	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

*New York City	19	0	19	23	15
Albany, N. Y.	19	0	19	21	15
Buffalo, N. Y.	16	0	16	19	14
†Rochester, N. Y.	15	0	15	18	14
Syracuse, N. Y.	19	0	19	21	15
Boston, Mass.	17	0	17	19	15
Augusta, Me.	19	3	22	25	15
Manchester, N. H.	17	2	19	21	15
Burlington, Vt.	19	2	21	23	15

*In steel barrels.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 4c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*21	14
Philadelphia, Pa.	15	*	15	*20	14
Allentown, Pa.	16	*	16	*21	14
Erie, Pa.	14	*	14	*19	14
Scranton, Pa.	16	*	16	*21	14
Altoona, Pa.	16	*	16	*21	14
Dover, Del.	16	3	19	22	14
Wilmington, Del.	16	3	19	22	14
Providence, R. I.	17	1	18	20	15
Boston, Mass.	17	0	17	19	15
Springfield, Mass.	17	0	17	19	15
Worcester, Mass.	17	0	17	19	15
Hartford, Conn.	17	2	19	21	15
New Haven, Conn.	17	2	19	21	15

*2-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	14	5	19	22	15
Covington, Ky.	15	5	20	23	15.5
Clarksdale, Miss.	15	4	19	22	13.5
Gulfport, Miss.	††16.5	4	††20.5	23.5	14
Jackson, Miss.	15	4	19	22	14.5
Natchez, Miss.	14.5	4	18.5	21.5	14
Vicksburg, Miss.	14.5	4	18.5	21.5	14
Birmingham, Ala.	16	4	20	23	15.5
Mobile, Ala.	15	4	19	22	15
Montgomery, Ala.	17	4	21	24	*16.5
Atlanta, Ga.	†14	3½	18	21	16
Augusta, Ga.	†16	3½	20	23	16
Macon, Ga.	†16	3½	20	23	16
Savannah, Ga.	†14	3½	18	20	14
Jacksonville, Fla°	14	4	18	21	14
Miami, Fla°	16	4	20	23	15.5
Tampa, Fla°	12	4	16	19	14
Pensacola°	**15	4	**19	22	15

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia has ½ cent per gal. inspection fee on gasoline which is deducted as well as the state gasoline road tax of 3½ cents, to get the actual net tank wagon market to dealer.

°Florida gasoline prices include ½c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Chicago, Ill.	16	0	16	18	13
Decatur, Ill.	16.2	0	16.2	18.2	13.1
E. St. Louis, Ill.	15.1	0	15.1	17.35	12.2
Joliet, Ill.	16.4	0	16.4	18.4	13.3
Peoria, Ill.	16.2	0	16.2	18.2	13.1
Quincy, Ill.	14.2	0	14.2	16.2	10.9
Indianapolis, Ind.	16.2	3	19.2	21.2	14.2
Evansville, Ind.	16	3	19	21	14
South Bend, Ind.	16.4	3	19.4	21.4	14.4
Detroit, Mich.	16.8	2	18.8	20.8	14.7
Grand Rapids, Mich.	16.7	2	18.7	20.7	14.6
Saginaw, Mich.	16.9	2	18.9	20.9	14.8
Green Bay, Wis.	16.6	2	18.6	20.6	13.4
Madison, Wis.	16.3	2	18.3	20.3	13.1
Milwaukee, Wis.	16.1	2	18.1	20.1	12.9
La Crosse, Wis.	17.2	2	19.2	21.2	14
Minneapolis, Minn.	15.2	2	17.2	19.2	13.9
Duluth, Minn.	16.5	2	18.5	20.5	13.9
Mankato, Minn.	15.1	2	17.1	19.1	13.7
Des Moines, Iowa	14	2	16	18	13.3
Davenport, Iowa	16.5	2	18.5	20.5	13.3
Sioux City, Iowa	16.1	2	18.1	20.1	12.9
Mason City, Ia.	14.5	2	16.5	18.5	13.3
St. Louis, Mo.	*15.6	2	17.6	19.9	12.3
Kansas City, Mo.	†16	2	18	20	11.6
St. Joseph, Mo.	†16.5	2	18.5	20.5	12.2
Fargo, N. D.	18.9	2	20.9	22.9	15.9
Grand Forks, N. D.	19.2	2	21.2	23.2	16.2
Minot, N. D.	18.9	2	20.9	22.9	15.9
Pierre, S. D.	17.5	3	20.5	22.5	14.9
Huron, S. D.	12.5	3	15.5	17.5	14.9
Wichita, Kans.	14.8	2	16.8	18.8	11.8
Bartlesville, Okla.	14	3	17	19	11.8

S. O. Indiana Q. D. A. schedule on tank wagon deliveries of gasoline, effective March 3 thru territory, except Wisconsin effective March 4: 50 gals. and over on delivery, 1c discount; 6,000 gals. and over per month, 1½c; 10,000 gals. and over per month, 2c; 15,000 gals. and over per month, 3c, except latter discount does not apply in Chicago.

Service station discounts: 200 gals. or more per month, and 2400 gals. or more per year, 2c per gal.

March 1, 1c discount on kerosene in 50 gal. dumps thru territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	19.25	13.25
McCook	17.75	2	19.75	21.75	14.75
Norfolk	16	2	18	20	13.75
North Platte	17.75	2	19.75	21.75	14.5
Scottsbluff	17.25	2	19.25	21.25	14

CONTINENTAL OIL

Denver, Colo.	15	3	17	17	15.5
Pueblo, Colo.	15	3	17	18	15.5
Grand Junction, Colo.	18.5	3	20.5	22.5	19
Casper, Wyo.	15	3	18	20	14
Cheyenne, Wyo.	15	3	18	20	15.5
Butte, Mont.	19	3	22	22	19
Helena, Mont.	19.5	3	22.5	24.5	19
SaltLake City, Utah.	17.5	3½	21	23	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	16	5	21	24	18

S. O. CALIFORNIA

Phoenix, Ariz.	18	3	21	25	21.5
Los Angeles, Cal.	12.5	2	14.5	18.5	15.5
Fresno, Cal.	13	2	15	19	16.5
San Francisco, Cal.	13	2	15	19	15.5
Reno, Nev.	17	4	21	25	19
Portland, Ore.	13.5	3	16.5	20.5	16.5
Seattle, Wash.	13.5	2	15.5	19.5	16.5
Spokane, Wash.	17.5	2	19.5	23.5	20.5
Tacoma, Wash.	13.5	2	15.5	19.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	13	4	17	20	12
Alexandria, La.	13	2	15	18	†14
Baton Rouge, La.	12	2	14	17	†12.5
Lake Charles, La.	13.5	2	15.5	18.5	†14
New Orleans, La.	*13.5	2	15.5	18.5	*14
Shreveport, La.	12	2	14	17	†13
Lafayette, La.	13	2	15	18	†13.5
Bristol, Tenn.	16	3	19	22	14
Chattanooga, Tenn.	16.5	3	19.5	22.5	15
Knoxville, Tenn.	16.5	3	19.5	22.5	15
Nashville, Tenn.	13.5	3	16.5	19.5	15
Memphis, Tenn.	14	3	17	20	14

*Includes 1c parish tax on gasoline and 2c tax on kerosene: 1c parish tax and 1c state tax.

†Kerosene prices in Louisiana include 1c state tax.

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
All Ohio points	16	2	18	20	15

MAGNOLIA PETROLEUM

Muskogee, Okla.	13	3	16	19	10
Oklahoma City	13	3	16	19	10
Tulsa, Okla.	13	3	16	19	10
Fort Smith, Ark.	13	4	17	20	12
Little Rock, Ark.	13	4	17	20	12
Texarkana, Ark.	†15	4	†*19	†*19	12
Dallas, Tex.	†13	3	†16	†16	11
Fort Worth, Tex.	†14	3	†17	†17	11
Houston, Tex.	†16	3	†19	†19	15
San Antonio, Tex.	†13	3	†16	†16	11
El Paso, Tex.	**16	3	**19	**19	16

*Within city of Texarkana the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In Texarkana district outside of the city the 4c state tax applies.

†3c per gal. discount to dealers.

**2c per gal. discount to dealers at El Paso, Feb 28.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M. & P. Naphtha	Cleaner Naphtha
Chicago	17	19	19
Detroit	18.7	20.7	20.7
Kansas City	18.2	†20.2	†20.2
Milwaukee	17.7	*21.7	*21.7
Minneapolis	*21	*23	*23
St. Louis	16.9	18.9	18.9
New York	..	21	..

*Includes 2c state tax.

†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Toronto	21.5	3	24.5	28	21
Ottawa	21.5	3	24.5	28	21
Cochrane	26.5	3	29.5	38	26
Ft. William	24.5	3	27.5	31	23.5

MANITOBA

Winnipeg	24.5	3	27.5	31	23.5

SASKATCHEWAN

Regina	27.5	0	27.5	32	27.5

ALBERTA

Edmonton	26.5	3	29.5	33	25.5
Calgary	24.5	3	27.5	31	23.5

BRITISH COLUMBIA

Vancouver	20	3	23	27	21

QUEBEC

Montreal	21.5	3	24.5	28	21
Quebec City	23.5	3	26.5	30	23
Three Rivers	23.5	3	26.5	30	23

NEW BRUNSWICK

St. John	24.5	3	27.5	32	24
Moncton	24.5	3	27.5	32	24

NOVA SCOTIA

Halifax	24.5	3	27.5	32	24
Sydney	26.5	3	29.5	34	26

PRINCE EDWARD ISLAND

Charlottetown	24.5	3	27.5	31	24

Note: In districts surrounding these points 1c additional is added to city price.

Russian Oils Contributing to Weakness Of American Export Market

By Special Correspondent

NEW YORK, May 9

EXPORT demand for the major petroleum products slumped last week. Not one bulk cargo sale of gasoline or kerosene was reported. The declining bulk markets have caused the majority of big Continental buyers to hold off. Prices were weak but unchanged from the previous week.

Continental and British buyers are purchasing larger quantities of Russian oils and this is also partly responsible for the slump in export buying. It was learned last week that the Medway Oil & Storage Co., Independent British distributor, has closed a five years' contract with the Russian Naphtha syndicate for nearly 10,000,000 barrels of Russian oils including 2,800,000 barrels of gasoline and 2,415,000 barrels of benzine.

One of the leading Independent refiners expects to book a cargo of 35,000 barrels of 28-32 dark gas oil for June shipment to the United Kingdom this week.

Export Gasoline—New York

There was a dearth of export inquiries for gasoline in bulk last week. Prices were weak but the big European buyers are still awaiting developments over here. Stocks along the Atlantic seaboard are heavy. In view of the small stocks of gasoline abroad, refiners feel that there will be a great influx of orders when the buying does start.

Cased gasoline was quiet. A leading refiner sold 35,000 cases of U. S. Motor and 64-66 gravity 375 end point gasoline for June shipment to the Levant but the prices were not disclosed. There is a good contract movement to Africa and South America.

Export Gasoline—Gulf Ports

One of the leading Independent refiners reported an inquiry from the United Kingdom for 50,000 barrels of U. S. Motor and 64-66 gravity 375 e.p. gasoline in conjunction with 41-43 water white kerosene for June shipment but this did not materialize. There was an unconfirmed report current that a leading refiner had sold 45,000 barrels of U. S. Motor and 64-66 gravity 375 e.p. gasoline for June shipment to France but details were lacking.

At the close of the week U. S. Motor was held at 7 cents; 60-62 gravity 400 e.p. at 7¼ cents; 61-63 gravity 390 e.p. at 7½ cents and 64-66 gravity 375 e.p. at 8 cents a gallon. One or two refiners were asking a quarter cent above these prices. Cased gasoline remained quiet. A large Independent refiner sold 25,000 cases of U. S. Motor and 64-66 gravity gasoline for June shipment to Australasia but prices were withheld. U. S. Motor was quoted at $1.65 and 64-66 gravity 375 e.p. at $1.75 a case in cargo lots.

Export Kerosene—New York

Foreign demand for kerosene failed to improve last week and prices were a quarter cent a gallon lower, although one or two refiners are still asking the previous week's prices. 41-43 water white was quoted at 6¾ cents a gallon at the refineries, while 43-45 water white was available at 7 cents on a firm bid. No bulk export inquiries have been received in some time. Cased kerosene remained quiet, the movement being mainly on consignment and contract. A small Independent refiner sold 20,000 cases for May-June shipment to the Near East.

Export Kerosene—Gulf Ports

Export demand for kerosene was light last week. Most of the big foreign buyers are following gasoline closely but showing little interest in kerosene. Water white 41-43 was freely offered at 5 cents and 44 water white at 6 cents. Cased prime white was steady at $1.45 while water white, 44 gravity was in fair demand at $1.55 a case, in cargo lots. It is reported that a leading Independent sold 45,000 cases but details are lacking.

Waxes—New York

A further slump in the demand for white crude scale waxes last week resulted in lower prices. Buying was entirely hand-to-mouth. Export buyers were uninterested while local consumers are not purchasing any more than they require. White crude scale 122-124 A.m.p. was freely offered at 2¾ cents a pound, a reduction of a quarter cent from the previous week's price.

Fully refined waxes were barely steady. The demand was still hand-to-mouth but refiners were less inclined to shade prices and believe that the bottom is close at hand. No export buying was reported.

Waxes—Gulf Ports

White crude scale wax was also lower at the various Gulf ports last week. Buyers were not active and trading failed to show any improvement over that of a week ago. White crude scale 124-126 A.m.p. was offered at 2⅞ cents a pound without attracting buyers while 124-126 semi-refined was quoted down to 3 cents a pound. For yellow crude scale 124-126 A.m.p. the asking price is 2¾ cents a pound. Fully refined waxes were equally dull. A Spanish buyer was reported inquiring for 50 tons of white crude scale wax but this failed to materialize. Fully refined 123-125 and 125-127 was quoted at 3.90 cents; 128-130 at 4 cents; 133-135 at 4.95 cents and 135-137 at 5¼ cents a pound.

Bunker Oil—New York

Demand for grade C bunker oil was slightly more spirited last week and all of the leading refiners continued to quote $1.75 a barrel at the refineries and $1.81½ cents a barrel f.a.s. New York harbor, although there have been rumors current of impending reductions. Most of the oil moving was on contract.

Diesel oil demand was fair at $2.30 a barrel f.o.b. New York harbor refineries.

Bunker Oil—Gulf Ports

Reflecting the downward tendency in crude oil, bunker oil was weaker at Gulf ports and it was reported that car goes were available at $1.35 a barrel at New Orleans. The price for bunkering purposes at that port was $1.55 a barrel. No cargo offerings were made at Tampico but for bunkering the price was $1.60 a barrel, including taxes. Heavy Panuco crude oil was weak at $1.20 a barrel f.o.b. Tampico, taxes to be added.

Gas Oil—New York

Demand for gas oil was less active and while there were persistent reports of price shading current no actual sales were heard of below 5¾ cents a gallon for 36-40 and 5½ cents a gallon for 28-34 at the New York harbor refineries. The export demand for gas oil failed to show any improvement and the leading refiners were shipping chiefly against contracts. Domestic demand has not shown any increase.

Gas Oil—Gulf Ports

The price range for the various gas oil was wider at the close of last week. Export buying failed to improve. It was rumored that 28,000 barrels of 32 plus dark oil sold at 4 cents for May shipment to the United Kingdom but confirmation was lacking. Refiners were asking from 4 to 4¼ cents a gallon for dark 32 plus and 4¼ to 4½ cents a gallon for 32 plus translucent. Domestic buying was light. With gasoline very weak, cracking prospects are not as promising as they were a year ago.

Lubricants—New York

Pennsylvania lubricating oils are weakening. Export demand has fallen off and buying last week was spasmodic and mainly confined to a few hundred barrels for prompt requirements. The

Complete Export Markets

New York Export Market

GASOLINE	May 9	May 2
U. S. Motor f. o. b. New York Harbor	8.50- 8.75	8.75- 9.00
U. S. Motor cases	23.90	23.90
KEROSENE		
43-45 150 W. W. Bulk Ref.	7.00 - 7.25	7.25
41-43 Prime White Bulk Ref.	6.75 - 7.00	7.00
43-45 150 W. W. Cases	17.15	17.15
42-44 110 S. W. Cases	16.15	16.15
GAS OIL		
36-40 Bulk Refinery	5.75	5.75
28-34 Bulk Refinery	5.50	5.50
MEXICAN BUNKER OIL		
Grade C. f. o. b. ref. Bulk	-$1.75	-$1.75
Diesel Oil f. o. b. ref. Bulk	-$2.30	-$2.30

LUBRICATING OILS

The following are cooperage basis f. o. b. New York, products being manufactured by inland refineries.

CYLINDER OILS (per Gallon in Barrels)		
1 inch Immersion Test; All Penna. Products		
Bright Stock dark	39.00	39.00
Filtered D 600	30.00	30.00
Filtered E 600-Warren	26.50	26.50
Unfiltered 600 s. r.	17.00-17.50	17.00-17.50
Unfiltered 650 s. r.	21.00	21.00
600 Flash s. r.	24.00	24.00
630 Flash	36.00	36.00

RED PARAFFIN (per Gallon in Barrels) (Viscosity at 70)			
300 vis	No. 5 color	-19.00	-19.00
250 vis	No. 5 color	-17.00	-17.00
475 vis	No. 5 color	-21.50	-21.50

NEUTRAL OILS (per Gallon in Barrels) (Viscosity at 70)			
200 Pale	No. 3 color	-42.50	-42.50
180 Pale	No. 3 color	-37.75	-37.75
150 Pale	No. 3 color	-36.25	-36.25

BLACK OIL (per Gallon in Barrels)		
25-30 cold test	13.25	13.25
15 cold test	14.25	14.25

MEDICINAL OILS (Includes Price of Drums) (Penna Stocks)	May 9	May 2
Domestic 875-.885 s. g.	- .85	- .85
Domestic 865-.870 s. g.	$ .75 - .80	$ .75 - .80
Russian 885-.890 s. g. 325-330 vis.	$1.00 - 1.10	$1.00 - 1.10

WAXES (Penna Stocks) (In Cents per Pound, F. A. S. Carload Lots)

WHITE CRUDE SCALE (Shipped in Bbls.)		
122-124 A. m. p.	- 2.75	- 3.00
124-126 A. m. p.	- 2.875	- 3.00
FULLY REFINED (Shipped in Burlap Bags)		
123-125 A. m. p. Philadelphia	- 4.00	- 4.00
125-127 A. m. p.	- 4.00	- 4.00
128-130 A. m. p.	- 4.125	- 4.125
130-132 A. m. p.	- 4.375	- 4.375
133-135 A. m. p.	- 5.125	- 5.25
135-137 A. m. p.	- 5.50	- 5.70
YELLOW CRUDE SCALE		
124-126 A. m. p.	- 2.75	- 2.95
PETROLATUMS (Penna Stocks) Per Pound		
Dark Green	- 2.00	- 2.00
Veterinary	- 3.125	- 3.125
Light Amber	- 3.750	- 3.750
Dark Amber	- 3.375	- 3.375
Cream	- 5.75	- 5.75
Lily White	- 7.50	- 7.50
Snow White	- 8.50	- 8.50

Gulf Export Market

GASOLINE F. O. B. Gulf Oil Terminals, Texas and Louisiana (Shipments of 20,000 Bbls. and over)

	May 9	May 2
U. S. Motor Bulk	7.00	7.00
60-62 400 e. p. Bulk	7.25	7.25
61-63 390 e. p. Bulk	7.50	7.50
64-66 375 e. p. Bulk	8.00	8.00
U. S. Motor, Cases (cargo lots)	$1.65	$1.65
64-66 Cases (cargo lots)	$1.75	$1.75
KEROSENE		
Water White, 43-45 Bulk	6.00	6.00
Prime White, 41-43 Bulk	5.00	5.00
Water White, cases (cargo lots)	$1.55	$1.55
Prime White, cases (cargo lots)	$1.45	$1.45
DOMESTIC GAS AND BUNKER OIL		
26-28, gravity, Bulk*	4.125	4.25
32 plus, bulk, Dark	4.00	4.125
Grade C, Bunker oil	$1.55	$1.55
Cargoes	$1.35	$1.40

*Translucent through neck of a 4 oz. bottle.

MEXICAN CRUDE AND BUNKER OILS F. O. B. Steamer Tampico

Heavy, Panuco crude Taxes to be added	$1.20	$1.20
Grade C, Bunker oil, F. O. B. Tampico, For Bunkering Purposes, taxes paid	$1.60	$1.60

SOUTH TEXAS (Viscosity at 100° F; cold test 0) (Tanker, F. O. B. Houston)

LUBRICATING OILS	May 2	May 9
100 Vis. No. 2 Unfiltered Pale	6.50	6.50
150 Vis. No. 2½ Unfiltered Pale	9.00	9.00
200 Vis. No. 3 Unfiltered Pale	9.50	9.50
300 Vis. No. 3 Unfiltered Pale	10.50	10.50
500 Vis. No. 3½ Unfiltered Pale	13.00	13.00
200 Vis. No. 5½ Red Oil	8.00	8.00
300 Vis. No. 5½ Red Oil	9.00	9.00
500 Vis. No. 6 Red Oil	11.00	11.00

Pacific Export Market

(Cargo lots quotations at seaboard, Los Angeles Gravity test on A.P.I. scale)

	May 9	May 2
Gasoline, U. S. Motor—53°-55°	- 6.00	- 7.00
Gasoline, U. S. Motor—blends and special cuts	- 7.00	- 8.00
Gas Oil, 30°—34° bbls	$1.00 - 1.05	$1.05 - 1.10
Diesel Oil, 27°—plus bbls	$ .95 - 1.05	$ .90 - .95
Bunker Oil, 14°—18° bbls	$ .70 - .75	$ .70 - 1.00
Fuel Oil, 14°—18° bbls	$ .70 - .75	$ .70 - 1.00
Kerosene, W. W. 38°—40°, 125-150 flash test (Gals.)	.0550 - .0650	.0550 - .0650
Cased Goods		
Gasoline, U. S. Motor	$2.00 - 2.25	$1.70 - 2.00
Kerosene, W. W. 38°—40°, 125-150 flash	$1.50 - 1.60	$1.45 - 1.55

N. Y. Domestic Market

The following light oil, gas and fuel oil prices are F. O. B. New York refineries being products made from Domestic (including California) and Mexican Crudes

GASOLINE	May 9	May 2
U.S.Motor Tank Cars De'd greater N.Y	- 9.75	9.75 -10.00
Calif. U. S. Motor tank cars, f.o.b. New York Harbor	- 8.75	8.75
U.S.Motor Tank Cars, f. o. b. New York Harbor	- 8.75	8.75 - 9.00
KEROSENE		
43-45 150 W.W.Tank Cars de'd greater N. Y.	- 8.00	- 8.25
41-43, Buk Ref. Prime	6.75 - 7.00	7.00- 7.50
FUEL OILS		
Grade C Bunker f. o. b. N. Y. Ref.	-$1.75	-$1.75
Diesel Oil f. o. b. Refinery	-$2.30	-$2.30
Gas Oil, 36-40, Bulk Refinery	- 5.75	- 5.75
Gas Oil, 28-34, Bulk Refinery	- 5.50	- 5.50
Furnace Oil, 38-42, Bulk, Refinery	- 6.50	- 6.50
Furnace Oil from Tank Wagons	- .11	- .11

movement in neutral oils was disappointing. Cylinder stocks were in fair demand on a basis of 17 cents a gallon for 600 s.r. unfiltered oil in barrels, New York. The movement in bright stock, dark was lighter than the preceding week. No bulk sales were disclosed.

Lubricants—Gulf Ports

Some of the big exporters reported a more active inquiry for zero cold test oils but as far as could be ascertained the demand from abroad was disappointing and prices showed a marked downward tendency. The stocks on hand are fairly large. Bulk buying orders from abroad have been scarce of late and it is evident that Continental consumers are holding off for lower prices.

Petrolatums

Snow white petrolatum was in slightly better demand last week. Export buyers were more active over here and prices held steady. Lily white, however, was dull. Dark green and yellow amber were moving a little more freely. Medicinal oils were in routine demand.

New Marketing Company in Chicago

CHICAGO, May 6.—Chicago Oil Marketing Co., organized recently to market all petroleum products, has opened offices at 14 E. Jackson Blvd. T. F. Thompson, formerly with Northland Oil Co. here, is sales manager. I. A. Archambault, of the Pennsylvania Oil Co., Evanston, is president and D. F. Allen vice-president. Mr. Thompson is secretary and treasurer.

Crude Oil Prices, as Posted by Major

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.90
Bradford District Oil in National Transit Lines (Bradford District)	2.90
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.80
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.80
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.75
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.60
Keister Grade in National Transit Lines (Butler Co.)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.40
Corning Grade in Buckeye Pipe Lines (Ohio)	1.45
Corning, O. heavy grade	1.35
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.50
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1, 1922 takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines $1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective March 14, 1927

Wooster	$1.77	Plymouth	$1.33
Lima	1.71	Western Kentucky	1.33
Waterloo	1.35	*Canadian Petrolia	2.11
Indiana	1.48	*Oil Springs	2.18
Princeton	1.60	*Posted by Imperial Oil Ltd.	
Illinois	1.60		

OKLAHOMA, KANSAS And NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective March 12, 1927

28-28.9	$1.12	35-35.9	$1.26
29-29.9	1.14	36-36.9	1.28
30-30.9	1.16	37-37.9	1.30
31-31.9	1.18	38-38.9	1.32
32-32.9	1.20	39-39.9	1.34
33-33.9	1.22	40-40.9	1.36
34-34.9	1.24	41-41.9	1.38
42-42.9	$1.40	48-48.9	$1.52
43-43.9	1.42	49-49.9	1.54
44-44.9	1.44	50-50.9	1.56
45-45.9	1.46	51-51.9	1.58
46-46.9	1.48	52 and above	1.60
47-47.9	1.50		

Above schedule met on March 12, by Gulf, Mid-Continent Pet. Corp., and Empire; by Carter, Humble and the Texas Co. on March 14.

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

March 14, same schedule as Prairie in above fields except that Humble is paying 2c less for each degree of gravity on oil below 28°.

Mirando, Tex $1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Effective May 5

Below 33	$1.05	43-43.9	$1.27
33-33.9	1.07	44-44.9	1.29
34-34.9	1.09	45-45.9	1.31
35-35.9	1.11	46-46.9	1.33
36-36.9	1.13	47-47.9	1.35
37-37.9	1.15	48-48.9	1.37
38-38.9	1.17	49-49.9	1.39
39-39.9	1.19	50-50.9	1.41
40-40.9	1.21	51-51.9	1.43
41-41.9	1.23	52 and above	1.45
42-42.9	1.25		
Corsicana heavy			$1.00

Carter Oil Co.

(Oklahoma and Kansas)

March 14, same schedule as Prairie.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective March 14

Hutchinson, and Carson Counties $0.95

Gray and Wheeler Counties:

28-28.9	$ .80	37-37.9	$ .98
29-29.9	.82	38-38.9	1.00
30-30.9	.84	39-39.9	1.02
31-31.9	.86	40-40.9	1.04
32-32.9	.88	41-41.9	1.06
33-33.9	.90	42-42.9	1.08
34-34.9	.92	43-43.9	1.10
35-35.9	.94	44 and above	1.12
36-36.9	.96		

WEST TEXAS

(Crane, Upton and Crockett Counties)

Humble Oil & Refining Co.

Effective March 14

Below 26	$ .70	31-31.9	$ .82
26-26.9	.72	32-32.9	.84
27-27.9	.74	33-33.9	.86
28-28.9	.76	34-34.9	.88
29-29.9	.78	35-35.9	.90
30-30.9	.80	36 and above	.92

NORTH LOUISIANA—ARKANSAS FIELDS

***Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto**

Effective March 14, 1927

Below 28	$1.10	40-40.9	$1.30
28-28.9	1.12	41-41.9	1.38
29-29.9	1.14	42-42.9	1.40
30-30.9	1.16	43-43.9	1.42
31-31.9	1.18	44-44.9	1.44
32-32.9	1.20	45-45.9	1.46
33-33.9	1.22	46-46.9	1.48
34-34.9	1.24	47-47.9	1.56
35-35.9	1.26	48-48.9	1.52
36-36.9	1.28	49-49.9	1.54
37-37.9	1.30	50-50.9	1.56
38-38.9	1.32	51-51.9	1.58
39-39.9	1.34	52 and above	1.60
Smackover, below 24			$1.00
do 24 and above			1.25
Bellevue			1.25
Cotton Valley			1.00
**Urania, La			1.00
†East El Dorado			1.00

**Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.

STEPHENS, ARKANSAS

Atlantic Oil Producing Co. and Louisiana Oil Refining Corp

Below 28	$1.00	30-30.9	$1.00
28-28.9	1.02	31-31.9	1.08
29-29.9	1.04	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

Smaller Jobbers Buy More Freely From New York Refiners

NEW YORK, May 9.—Although competition among the leading New York harbor and Philadelphia refiners appeared keener last week, underlying conditions in the gasoline market were better than the previous week. Improved weather has brought an influx of buying orders calling for prompt deliveries, indicating that stocks in smaller distributors' hands are low.

All the big New York harbor refiners were quoting U. S. Motor gasoline at 8¾ cents a gallon at the refineries and 9¾ cents a gallon in tankcars delivered to the nearby trade, while the same prices were quoted for California motor gasoline. In cargo lots, California gasoline brought 8½ cents a gallon laid down at New York.

Upstate buyers have been showing more willingness to purchase ahead. Many of these buyers feel that prices will go a little lower but will probably soar as soon as the bottom is reached and are taking no chances of paying higher prices than those now prevailing.

Tankwagon prices are weak and at several points in this city gasoline is retailing at 15 cents a gallon or 4 cents below the tankwagon price.

At Philadelphia the price for U. S. Motor in tankcars at the refineries ranged from 8½ to 8¾ cents a gallon. Competition was keen.

Gulf refiners were holding out for 7⅜ to 7½ cents a gallon for U. S. Motor gasoline in bulk at the refineries, although one factor was reported willing to sell at 7¼ cents on a bid.

Kerosene was weaker at New York. Prime white 41-43 was quoted at 6¾ cents a gallon while water white 41-43 was available at 7 cents. The domestic demand showed a further decline from the previous week. Weather has been improving and consumption is falling.

Gulf refiners were asking 5½ cents a gallon for prime white 41-43 gravity and 6½ cents a gallon for water white 44 gravity in bulk at the refineries and 6½ and 7½ cents a gallon, respectively in tankcars delivered to the nearby trade. Buying, however, was very light throughout the week.

Crude Price Changes

DALLAS—On May 5 Magnolia Petroleum Co., after having reduced Mid-Continent crude five times this year, two of which reductions had not been met by any of the larger purchasers, advanced all crude it buys on a gravity basis in Oklahoma, Kansas, north and east central Texas, 10 cents per barrel, except Luling, Tex. field which was advanced 5 cents per barrel. Its gravity schedule and 2 cent differential for each degree of gravity are unchanged. Oil below 33 gravity is now posted at $1.05, 33 to 33.9 at $1.07, with 2 cents additional for each succeeding degree of gravity, up to top grade of 52 and above, which is $1.45 per barrel.

The two last previous changes which had not been met by any of the large purchasers were reductions of 5 to 15 cents on April 7 and 10 cents on April 20.

Purchasers, in All Fields (in Effect, May 9, 1927)

GULF COASTAL
Prices of The Texas Co. (Effective March 14)

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

†The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS
Prices of Ohio Oil Co. and Midwest Refining Co.
(Salt Creek prices effective March 12)

‡Salt Creek	29-29.9	$1.14
" "	30-30.9	1.16
" "	31-31.9	1.18
" "	32-32.9	1.20
" "	33-33.9	1.22
" "	34-34.9	1.24
" "	35-35.9	1.26
" "	36-36.9	1.28
" "	37 and above	1.30
Elk Basin		1.33
Grass Creek light		1.33
Big Muddy		$1.25
Lance Creek		1.33
Rock Creek		1.25
Mule Creek		1.30
Rex Lake		1.10
‡Osage		1.33
‡Cat Creek, Mont		1.33
Sunburst, Mont		1.35
‡Hogback, N. Mex		1.38
Artesia, N. Mex		1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA
Standard Oil Co. of California

Gravity	Signal Seal Beach Hill Huntington Beach	Ingelwood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
										Santa Maria and Ventura Posted by Union Oil Co.					
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	.....	$ .85	$ .85	.....	$ .75	.75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	.....	.85	.....	.85	.85	.....	.77	.77	.76	.78	.85	.85
21-21.9	.86	.86	.85	.....	.86	.....	.85	.86	.....	.79	.79	.77	.81	.85	.85
22-22.9	.87	.87	.85	.....	.87	.....	.85	.87	.....	.81	.81	.78	.85	.85	.85
23-23.9	.88	.88	.....	.....	.88	.....	.85	.88	.....	.83	.83	.79	.89	.85	.85
24-24.9	.89	.89	.....	.....	.89	$ .89	.85	.89	$ .85	.85	.85	.80	.93	.85	.85
25-25.9	.90	.90	.....	.....	.90	.90	.86	.90	.85	.87	.87	.81	.97	.86	.86
26-26.9	.92	.92	.....	.....	.92	.92	.87	.91	.85	.89	.89	.83	1.01	.87	.87
27-27.9	.94	.94	.....	.....	.94	.94	.88	.92	.85	.91	.91	.85	1.05	.88	.88
28-28.9	.96	.96	.....	.....	.96	.96	.89	.93	.86	.93	.93	.87	.....	.89	.89
29-29.9	.98	.....	.....	.....	.98	.98	.90	.94	.87	.96	.96	.89	.....	.91	.91
30-30.9	1.00	.....	.....	.....	1.00	1.00	.91	.95	.88	.99	.99	.91	.....	.93	.93
31-31.9	1.03	.....	.....	.....	.....	1.03	.....	.....	.89	1.02	1.02	.93	.....	.....	.95
32-32.9	1.06	.....	.....	.....	.....	1.06	.....	.....	.91	1.05	1.05	.95	.....	.....	.97
33-33.9	.....	.....	.....	.....	.....	1.09	.....	.....	.93	1.08	1.08	.97	.....	.....	.99
34-34.9	.....	.....	.....	.....	.....	1.12	.....	.....	.95	.....	1.11	.99	.....	.....	1.01
35-35.9	.....	.....	.....	.....	.....	1.15	.....	.....	.97	.....	.....	1.01	.....	.....	1.03
36-36.9	.....	.....	.....	.....	.....	1.18	.....	.....	.99	.....	.....	.....	.....	.....	1.06
37-37.9	.....	.....	.....	.....	.....	1.21	.....	.....	1.01	.....	.....	.....	.....	.....	1.09
38-38.9	.....	.....	.....	.....	.....	1.24	.....	.....	1.03	.....	.....	.....	.....	.....	1.12
39-39.9	.....	.....	.....	.....	.....	1.27	.....	.....	1.06	.....	.....	.....	.....	.....	1.15
40-40.9	.....	.....	.....	.....	.....	1.30	.....	.....	1.09	.....	.....	.....	.....	.....	.....
41-41.9	.....	.....	.....	.....	.....	1.33	.....	.....	1.12	.....	.....	.....	.....	.....	.....
42-42.9	.....	.....	.....	.....	.....	1.36	.....	.....	1.15	.....	.....	.....	.....	.....	.....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are the average market prices for the week on materials used by refiners and compounders f. o. b. shipping point as effective this date.

Refiners' Supplies

	May 9	May 2
Soda Ash light 58% bags.cwt.	$1.325	$1.325
Silicate of Soda 60 deg. drums.....cwt.	$1.65	$1.65
Sal Soda wks	$0.90–1.1090	1.10
Caustic Soda 76% solid..cwt.	$3.00	3.00
Chloride of Lime.....cwt. works	$2.00	2.00
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point.....per ton	$10.50–11.00	10.50–11.00
Liquid Chlorine tank cars works.....lb.	4	4

Compounders' Supplies (Open Market)

Vegetable Oils—			
Linseed carloads spot.....lb.		11.2	10.9
June		11.2	10.9
Tanks spot		10.4	10.1
*Soya Bean Tanks, Coast .lb.		9.625	9.625
Castor Oil—			
No. 1 Carlots, Bbls		14.00	14.00
No. 3 Carlots, Bbls		13.50	13.50
Animal Oils—			
English Degras		5.375	5.75
Domestic Degras, bbls., carloads.....lb.		4.50	4.75
Oleic Acid—			
Dist. Bbls.....lb.	9.50–9.75	9.50–9.75	
Saponified Bbls.....lb.	9.75–10	9.75–10	
Lard Oils—			
Prime Winter Strained. 2 to 1½ ffa.	40-45c.t.lb.	15.00	15.00
Extra Winter Strained.. 2 to 4½ ffa. 40-45c.t.lb.		13.00	13.25
Extra..... 4 to 5 ffa. 40-45c.t.lb.		11.75	12.25
Extra No.1.. 7 to 10 ffa. 40-59c.t.lb.		11.25	11.00
No. 1.....15 to 18 ffa. 40-45c.t.lb.		10.25	10.75
No. 2.....22 to 23 ffa. 40-45c.t.lb.		10.00	10.25
Prime Edible Tallow under 1⅞ ffa. 40-45c.t.N.Y.....lb.		8.375	8.375
Tallow acidless.....lb.		10.25	10.50
Lard Stearine.....lb.		15.00	15.00
Oleo Stearine.....lb.		9.25	9.25
Neatsfoot Oil—			
Pure.....bbls.-lb.		12.75	12.75
Extra.....bbls.-lb.		11.25	11
No. 1.....bbls.-lb.		10.25	10
Cold pressed.....lb.		15.75	15.75
Fish Oils—			
Menhaden Oil			
Light pressed.....gal.		60	60
White.....gal.		66	66
Yellow bleached.....gal.		64	64
Whale, extra winter bleached.....gal.		82	82
Naval Stores—			
Turpentine, N. Y.....gal.		63.5	64
Turpentine†.....gal.		56.75	57.75
Rosin, B. N. Y.		$ 9.55	$ 9.50
Rosin, F. N. Y.....bbl.		$10.25	$10.25
Rosin, B†.....bbl.		$ 8.00	$ 7.50
Rosin, F†.....bbl.		$ 8.55	$ 8.75
Rosin Oil 1st run.....gal.		57	57
Rosin Oil 2nd run.....gal.		62	62
Pine Tar—			
Kiln Burnt.....bbl.		$16.00	$16.00
Retort.....bbl.		$16.00	$16.00

†Savannah, Ga., market.
*Nominal.

Alcohol—Denatured—

Formula 5			
Bbls.....gal.		46.5	46.5
Drums.....gal.		39.5	39.5

Tide Water-Associated Nets $1.38 A Share on Common in 9 Months

NEW YORK, May 6.

TIDE Water-Associated Oil Co. for nine months ended Dec. 31, 1926, reports net earnings after all charges of $9,885,909, equivalent, after preferred dividends, to $1.38 a share on 4,786,479 shares of common stock outstanding, or at the annual rate of $1.84 a common share. All development expenses, both on producing and non-producing properties, were deducted from earnings as operating expenses and not capitalized. Charges for depreciation and depletion amounted to $8,687,519, representing 42 per cent of operating income.

Tide Water Oil Income Accounts

	1926	1925
Gross earnings	$ 88,890,082	$ 78,755,465
Operating expense	73,769,143	66,859,365
Operating income	$ 11,120,909	$ 11,896,100
Other income	1,115,753	733,184
Total income	$ 12,236,661	$ 12,629,283
Deprec., deplet	6,070,594	5,785,655
Income taxes	770,758	889,672
Net income	$ 5,395,309	$ 5,953,956
Minority interest	236	33,297
Tide Water interest	$ 5,395,073	$ 5,987,253
Preferred dividends	1,075,003	299,732
Common dividends	3,214,490	2,017,844
Surplus	$ 1,105,580	$ 3,669,677

Balance Sheets of Dec. 31 of Tide Water Oil

ASSETS

	1926	1925
Producing properties	$ 41,156,941	$ 38,243,951
Refining properties	30,779,527	27,124,364
Transportation equip.	20,363,349	19,515,534
Marketing property	8,238,491	7,111,843
Miscellaneous	2,021,859	1,839,891
Total property	$102,560,167	$ 93,835,582
Deprec., deplet	37,260,222	32,967,184
Net property	$ 65,299,945	$ 60,868,398
Invest. in affil. cos	7,353,420	6,403,229
Other investments	1,575,184	1,127,146
Invested reserves	3,229,798	1,923,578
Cash	2,420,164	7,518,524
Securities	6,135,951	9,070,042
Notes receiv	902,458	608,608
Accounts rec	5,676,577	5,221,234
Due from affil. cos	522,733	67,234
Oil inventory	17,983,227	15,111,779
Materials, supplies	1,856,649	1,729,126
Due from pfd. stk., subs		24,150
Deferred items	1,662,316	1,796,015
Total	$114,618,421	$111,469,062

LIABILITIES

Notes payable	$ 117,253	
Purchase money oblig.	1,513,518	$ 313,737
Accounts pay	3,275,155	3,204,366
Wages and Miscel	1,187,690	1,023,231
Due affil. cos	283,887	107,097
Accrued taxes	1,061,673	1,047,969
Capital stock subs	324,281	501,671
Deferred purch. oblig.	1,250,351	1,563,945
Preferred stock 5%	20,705,200	25,042,000
Common stock	53,951,175	50,455,775
Surplus	26,134,383	23,613,495
Minority interest	1,036	92,193
Total	$114,618,421	$111,469,062

Consolidated earnings mentioned do not include those of Tidal Osage Oil Co., of whose common stock the parent company has a controlling interest and which in 1926 earned $2,248,297 available for its common stock.

Tide Water-Associated ended the nine months' period with $16,034,861 cash or its equivalent, made up of $6,669,113 cash, $6,135,950 marketable securities and $3,229,798 reserve funds, also invested in marketable securities. Net working capital amounted to $58,484,912, the ratio of current assets to current liabilities being 3.5 to 1.

In his letter to stockholders, President Axtell J. Byles wrote physical assets of the consolidated companies are carried at cost, less depreciation and depletion, and do not give effect to the appreciation of values shown by the appraisal of physical properties made in March, 1926. The item of investments in affiliated companies, not consolidated, amounting to $16,659,179, is also carried at cost and does not reflect an increase of $2,000,000 in their book value, due to undistributed earnings. This item includes the investment in Tidal Osage Oil Co.

Commenting on the company's activities, Mr. Byles said:

"During 1926, the subsidiary companies expended approximately $7,000,000 for oil producing properties and acreage, $5,000,000 for additions, replacements and betterments in manufacturing units and more than $3,000,000 for additional domestic marketing facilities. Two additional ocean-going tankers have been purchased and a third is under construction."

Tide Water Associated Oil Co. was organized in March, 1926, and acquired 78 per cent of the outstanding common stock of Tide Water Oil Co. and 94½ per cent of the capital stock of Associated Oil Co.

Daily average production of oil by all controlled companies in 1926 was 62,231 barrels. In the first quarter of 1927, daily average production rose to 89,985 barrels. Reserves of undeveloped acreage at the end of 1926 were 560,241 acres, or more than double the reserve of 278,391 acres held by the various companies at the end of the previous year.

The Tide Water Oil Co., the eastern component of the Tide Water-Associated netted $5,395,309 in all of 1926, or $2 a share, after dividends on the preferred stock, on 2,158,047 shares of commonstock. Net in 1925 was $5,987,253 of $2.81 a share on the 2,018,231 shares of common stock outstanding at the end of 1925.

The balance sheet of Tide Water of Dec. 31 shows an increase of $8,724,585 in fixed assets during 1926, distributed principally as follows: $2,912,990 on producing properties; $3,655,163 on refineries and equipment, and $1,126,648 on marketing properties. At the end of the year current assets amounted to $35,497,758 and current liabilities to $7,439,176, leaving net working capital of $28,058,582, compared with $33,654,295 at the end of 1925.

Tide Water-Associated Income Account April 1 to Dec. 31, 1926

Gross sales	$126,776,088
Expenses, etc	106,254,276
Operating income	$ 20,521,812
Other income	1,324,557
Total income	$ 21,846,369
Depreciation and depletion	8,687,520
Federal taxes	1,150,086
Profit	$ 12,008,763
Min. int. prop. of earnings	2,122,855
Net income	$ 9,885,908
Preferred dividends	3,261,213
Common dividends	2,854,937
Surplus	$ 3,769,758
P. & L. surplus	3,595,027

Tide Water-Associated Balance Sheet of Dec. 31, 1926

ASSETS

Producing properties	$116,561,967
Refining	44,883,352
Transportation	37,016,783
Marketing	23,074,260
Miscellaneous	3,352,181
Total property	$224,888,543
Depreciation, depletion	86,392,974
Net properties	$138,495,569
Cash	6,669,114
Marketable securities	6,135,951
Notes, acceptances rec	2,283,512
Accounts receiv	13,619,603
Due from affil. cos	808,701
Oil inventory	45,172,102
Materials, supplies	7,054,539
Other current assets	131,352
Invested reserve funds	3,229,798
Secured advances	1,182,738
Sinking fund deposit	162,975
Investments in affil. cos	16,659,180
Other investments	1,868,538
Deferred items	3,736,430
Total	$247,160,099

LIABILITIES

Funded debt	$ 21,525,000
Notes payable	1,466,798
Purchase money oblig	1,513,518
Accounts payable	12,609,189
Wages, interest, etc	3,392,055
Due affiliated cos	1,942,259
Income tax reserve	1,298,721
Preferred divs. payable	1,117,420
Due on employes' stock subscriptions	324,281
Deferred purchase oblig	1,250,351
Deferred items	1,029,516
Contingency reserve	5,651,155
6% Preferred stock	72,724,400
Common stock	74,536,419
Surplus	3,595,028
Minority interest in subs	43,183,989
Total	$247,160,099

Transactions In Oil Shares on New York Stock Exchange

1926 High	1926 Low	1927 High	1927 Low		Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 7 Sales	First	High	Low	Last	Ch'ge
82⅞	24¼	37⅝	27⅝	(sh)	814,800	N.P.	Amerada Corp.	50cQ	Jan. 31, 27	11,600	28	29¾	27⅞	29½	+ 1⅝
74	39⅞	60½	35⅛	(sh)	200,000	N.P.	American Republics	.....	.....	200	47	47½	47	47½	+ 2½
59½	44¾	50¼	45	$	56,000,000	$ 25	Associated Oil	50cQ	Mar. 25, 27	500	45½	46	†45	45¼	— ¾
128⅜	97	117⅞	107		50,000,000	100	Atlantic Refining	.....	June 16, 24	3,500	108½	111½	107¼	110½	+ 2⅛
120	115¼	118	115¼		20,000,000	100	do pfd	$1¾Q	May 2, 27	.....	.....	.....	.....	.....	.....
38½	23½	35½	23⅛		25,000,000	25	Barnsdall Corp. A	62½cQ	Apr. 5, 27	28,400	24⅜	26¼	24⅜	26¼	+ 2¼
29½	22¼	32½	22		3,715,775	25	do B	62½cQ	Apr. 5, 27	2,200	23¾	24½	23	24½	+ 1½
48⅛	29¾	32⅞	21½		47,709,175	25	California Petroleum	50cQ	Mar. 1, 27	36,300	24⅛	26⅜	24⅛	26	+ 2⅛
94¼	50	96¾	72½		23,721,200	100	General Asphalt	.....	.....	27,700	73⅛	77⅞	73⅛	75⅛	+ 2½
140½	94⅞	144⅞	113		7,294,000	100	do pfd	$1¾Q	Mar. 1, 27	300	116¼	117	116¼	117	+ 2¾
72	50¼	124¾	60⅛		25,000,000	100	Houston Oil	.....	.....	60,300	116½	124	116	119½	+ 3½
84	19⅝	32¾	18	(sh)	500,000	N.P.	Independent Oil & Gas	25cQ	Apr. 18, 27	12,300	19⅛	21¼	18⅞	21¼	+ 2⅜
18¾	7¾	11⅛	7⅝	$	3,283,960	$ 10	Indian Refining	.....	Dec. 15, 20	600	8⅛	8½	8⅛	8½	+ ½
12½	8	10⅞	7⅜		4,546,490	10	do ctfs	.....	.....	9,622	7⅝	8	† 7⅜	7⅞	+ ⅜
104	90	112	102		2,296,400	100	do pfd	.....	Dec. 15, 21	.....	.....	.....	.....	.....	.....
¾	¼	.....	.....		1,644,760	10	Kansas & Gulf	.....	.....	.....	.....	.....	.....	.....	.....
44½	19⅜	32½	20½	(sh)	3,988,629	N.P.	Lago Oil & Transport	75cQ	May 1, 27	9,500	25½	27⅞	25⅛	27½	+ 1⅜
19⅞	12	18¾	12½	(sh)	1,134,238	N.P.	Louisiana Oil Refining	.....	.....	6,800	12½	13⅜	12½	13	+ ½
98	93	97	90	$	4,000,000	$100	do pfd	$1¾Q	May 16, 27	100	92	92	92	92	+ 2⅛
28⅞	16¼	22¾	13½	(sh)	380,000	N.P.	Maracaibo Oi	.....	.....	1,600	13¾	14¾	†13½	13⅞	— ⅛
83¾	49¼	58½	36	(sh)	1,928,408	N.P.	Marland Oil Co	$1Q	Dec. 31, 26	132,600	36⅝	39½	36⅛	39⅛	+ 2¼
.....	.....	.....	.....	$	45,942,800	$100	Mexican Petroleum	$3Q	Apr. 20, 27	10	215	215	215	215	+15
.....	.....	.....	.....		12,000,000	100	do pfd	$2Q	Apr. 20, 27	.....	.....	.....	.....	.....	.....
18¾	6	9¼	5¾	(sh)	945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	1,100	6	6¾	5⅞	6½	+ ¾
47	27½	39⅜	29	(sh)	1,357,800	N.P.	Mid-Continent Petroleum	75cQ	May 1, 27	22,000	29½	31⅜	29⅜	31¼	+ 1¾
104¾	90	105	97	$	6,718,000	$100	do pfd	$1¾Q	Mar. 1, 27	200	100	100	100	100	+ 3
2½	¾	3⅛	1⅝		25,415,540	10	Middle States	.....	July 1, 23	32,500	2½	3	2½	3	+ ½
1⅜	½	2¼	1⅛		4,384,680	....	do ctfs	.....	.....	1,800	1¾	1⅞	1⅝	1⅞	+ ¼
2¼	1	1⅞	1¼	(sh)	3,500,000	N.P.	Pacific Oil	.....	Jan. 20, 26	2,200	1¼	1¼	1¼	1¼	0
76½	56½	65⅞	56⅛	$	48,307,400	$ 50	Pan American P. & T.	$1.50Q	Apr. 20, 27	4,500	57½	58⅝	56¾	58	+ 1
78¾	56⅞	66¾	56⅜		100,546,350	50	do B	$1.50Q	Apr. 20, 27	39,900	57½	59⅝	57⅛	58¾	+ 1½
46	30	37⅞	19	(sh)	400,000	N.P.	Pan American Western B	.....	Jan. 30, 27	9,700	21	24⅜	21	23⅞	+ 3⅛
12	4½	18⅞	8	(sh)	198,770	N.P.	Panhandle P. & R.	.....	.....	6,800	8½	12¾	8½	12	+ 3¾
99⅜	51	81¾	68½	$	2,935,200	$100	do pfd	.....	July 2, 23	.....	.....	.....	.....	.....	.....
57⅜	40	60¼	39¾	(sh)	2,406,796	N.P.	Phillips Petroleum	75cQ	Apr. 1, 27	10,300	40¾	44	43⅞	43⅞	+ 2⅝
1⅞	½	¾	½	$	29,622,925	$ 25	Pierce Oil Corp	.....	.....	700	⅝	¾	⅝	¾	+ ⅛
27⅛	11⅛	18½	13½		15,000,000	100	do pfd	.....	Feb. 1, 22	400	18	18½	18	18½	+ ⅜
7	2¼	3⅞	2½	(sh)	2,500,000	N.P.	Pierce Petroleum	.....	.....	2,600	3⅜	3½	3⅜	3⅜	— ⅛
40¾	11	32	16¾	$	11,467,850	$ 50	Producers & Refiners	.....	Sept. 15, 23	5,500	27⅝	31	28½	28	+ ⅝
61¾	30¾	50	36⅞		2,845,350	50	do pfd	.....	May 1, 25	40	44¾	44¾	44	44	0
51	25¼	33⅜	26		75,959,250	25	Pure Oil Co	87½cQ	Mar. 1, 27	14,600	26¾	28	26⅝	27¾	+ 1
112¾	106	113	111⅜		13,000,000	100	do 8% pfd	$2Q	Apr. 1, 27	200	112¾	112¾	112½	112½	— ⅛
57¾	47⅜	58	48½	(sh)	646,502	13.40	Royal Dutch, N. Y. shares	$1.83¾	Jan. 28, 27	2,700	48⅞	50½	48⅝	50½	+ 1¾
40⅝	40½	47⅜	43⅝	(sh)	86,962	£2	Shell Transport & T	96.7e	Jan. 17, 27	100	44¾	44¾	44¾	44¾	+ 1⅜
51	24	81¾	25	(sh)	10,000,000	N.P.	Shell Union Oil	35cQ	Mar. 31, 27	27,600	27	28⅜	26¾	28	+ 1⅜
114	103	111	107½	$	18,350,400	$100	do pfd	$1½Q	May 16, 27	.....	.....	.....	.....	.....	.....
28⅜	15⅛	22¾	17¼		7,208,080	10	Simms Petroleum	37½cQ	Apr. 1, 27	15,600	17⅝	18⅛	17¼	18	+ ¼
24⅜	16¾	22⅜	16½	(sh)	4,500,782	N.P.	Sinclair Consolidated	.....	May 31, 24	29,700	16½	18¼	16½	17⅜	+ 1⅛
99½	90	103¼	97	$	17,210,000	$100	do pfd	$2Q	May 16, 27	200	98½	99	98½	99	+ 1
57⅛	26⅝	37⅜	25		27,396,590	25	Skelly Oil Co	50cQ	Mar. 15, 27	28,000	25⅜	27⅝	25¼	27⅝	+ 2⅛
65⅝	52⅝	60¾	50⅜	(sh)	13,016,434	N.P.	S. O. California	62½cQ	Mar. 15, 27	53,000	53⅜	55⅛	52⅜	55¼	+ 3
46⅜	37⅜	41⅜	35½	$	517,397,550	$ 25	S. O. New Jersey	25cQ	Mar. 15, 27	40,900	35¼	37	35⅛	37	+ 1⅝
119⅜	115	116¼	114⅝		206,958,970	100	do pfd	$1¾Q	Mar. 15, 27	.....	.....	.....	.....	.....	.....
33¼	32½	34⅜	30⅛		419,023,275	25	S. O. New York	40cQ	Mar. 15, 27	49,000	30¼	30¾	29⅞	30½	+ ⅜
41⅜	30⅛	34⅞	30	(sh)	1,105,384	N.P.	Sun Oil	25cQ	Mar. 15, 27	1,200	31	32	30⅛	31⅛	— ¾
5¾	1	6½	3¾	(sh)	1,121,368	N.P.	Superior Oil Corp	.....	Dec. 20, 20	5,500	4¼	4⅞	4¼	4½	+ ¼
58	48	58	51	$	16,328,725	$ 25	The Texas Co	75cQ	Dec. 30, 26	.....	.....	.....	.....	.....	.....
57⅞	53⅛	58	45		141,467,575	25	The Texas Corp	75cQ	Apr. 1, 27	21,500	45⅜	47¼	45⅜	47⅛	+ 1½
19½	12	16⅜	12		8,380,340	10	Texas Pacific Coal & Oil	15cQ	Mar. 31, 27	6,100	12	13½	12	12⅞	+ ⅜
59¾	37	29⅛	23¼	(sh)	2,157,991	N.P.	Tide Water Oil Co	37½cQ	Mar. 31, 27	600	.....	24⅞	23¾	24⅞	— ⅛
103	87¼	89¾	87	$	20,705,100	$100	do 5% pfd	$1.25Q	May 16, 27	1,200	87½	88¼	87	87	— ¾
8½	3	5	3¾	(sh)	3,742,029	N.P.	Transcontinental Oil	.....	.....	15,500	3¾	4	3¾	3⅞	+ ⅛
58¾	37¼	56⅛	39⅜	$	40,690,650	$ 25	Union Oil of California	50cQ	May 10, 27	36,500	42¼	45½	42⅛	44¼	+ 2⅛
120⅜	84¾	112¾	94		30,784,000	100	Union Tank Car Co	$1¼Q	Mar. 1, 27	1,500	106	109¾	106	109	+ 3
29¾	25⅛	27½	22	(sh)	490,000	N.P.	White Eagle Oil & Refining	50cQ	Apr. 20, 27	1,200	22⅛	23½	22⅛	23½	+ 1¼

*New High †New Low xEx-Dividend Total Sales 846,977

Oil Dividends

	Amt.	Payable	Stock of Record
Calif. Pet. q	50c	June 1	May 14
Ohio Oil q	50c	June 15	May 14
do extra	25c	June 15	May 14
S. O. California q	62½c	June 15	May 16
S. O. Indiana q	62½c	June 15	May 16
do extra	25c	June 15	May 16
Vacuum Oil q	50c	June 20	May 3
do extra	50c	June 20	May 31

NEW YORK BONDS

Week Ending May 6

	High	Low	Last	Ch'ge
Amer. Rep. Deb. 6s	99¼	99¼	99¼	0
Assoc. Oil gold 6s	102¾	102½	102½	— ⅛
Atlantic Refg. deb. 5s	101½	101⅜	101½	+ ⅛
Barnsdall Corp. 6s	99¾	97	99¾	+2¾
Barnsdall Corp. 6s ex war.	91½	89½	91½	+2
Cal. Petrol sf 5s	94⅜	92½	94⅜	+2⅜
Cal. Petrol cor 5½s	99	97¾	99	+18
Empire Gas & Fuel 7½s	110	109	110	+ ¾
Empira Gas & Fuel 6½s	105¼	104½	104½	0
Gen. Asphalt 6s	107½	106⅛	107	+1
Gen. Petroleum 5s	101⅛	100¾	101⅛	+ ⅛
Humble Oil & Refg. 5½s	102⅜	102	102⅛	— ⅛
Humble Oil 5s wi	99	98½	98¾	+ ⅛
Mid-Cont. Pet. 6½s	104½	104¼	104½	+ ¼
Pan-Amer. P & T 7s	105¼	105⅛	105¼	+ ⅛
Pan-Amer. P & T 6s	95	93⅛	95	+2
Pan-Amer. P & T 6s	103¼	102⅝	103⅜	+ ⅛
Prod. & Refnrs. 8s	110¾	110¾	110¾	0
Simms Pet. cvt 6s	100½	100	100½	+ ⅛
Sinclair Con. Oil Col. 7s	100	99⅛	99⅞	+ ¼
Sinclair Con. Oil Con. 6½s	97	95¼	97	+1½
Sinclair Con. Oil 6s	99⅞	99¾	99⅞	0
Sinclair Crude Oil 6s	100⅛	99¾	100	0
Sinclair Pipe Line sf 5s	93½	91⅜	92½	— ⅛
Standard Oil N. Y. 4½s	95½	95¼	95⅜	+ ⅛
Standard Oil N. J. deb. 5s	102¼	101⅜	102	0
Union Oil of Cal. 6s-A	108¾	107¾	107¾	— ¼
Union Oil of Cal. 1st 5s	101¾	101¾	101¾	— ¼
Union Oil of Cal. 5s-C	98½	98⅛	98½	+ ⅛

PITTSBURGH STOCK EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended May 6 Sales	First	High	Low	Last	Ch'ge
8½	6⅝	.....	.....	N.P.	Andes Petroleum	.....	.....	.....	.....	.....	.....
8½	5¾	8¼	6⅞	$ 10	Arkansas Nat. Gas	1,355	6⅞	7¼	6⅞	7⅛	+ ¼
90½	79¾	96½	84	100	Columbia Gas	80	91¼	94	91¼	94	+4
101¾	95	105½	100	100	do pfd	.....	.....	.....	.....	.....	.....
17	12½	15	9½	10	Devonian Oil	350	10	10	†9½	9⅞	— ⅛
116½	112	116⅝	115	100	Duquesne Lt. 7% pfd.	.....	.....	.....	.....	.....	.....
10	5⅛	12¼	6	N.P.	Houston Gulf Gas	1,558	10⅛	11⅛	10⅛	11	— ⅛
46	39	46¼	37¼	$ 25	Lone Star Gas	2,906	42¼	43⅝	42	43⅝	+1⅛
47¾	33⅜	.....	.....	25	Ohio Fuel Corp	.....	.....	.....	.....	.....	.....
47½	42	21¾	21	....	do ctfs	.....	.....	.....	.....	.....	.....
6¾	5	6	6	....	Ohio Oil & Gas	.....	.....	.....	.....	.....	.....
54	21	21	21	25	Oklahoma Nat. Gas	.....	.....	.....	.....	.....	.....
21	19¼	23	20¼	....	do ctfs	1,700	22	22½	22	22½	+ ½
5⅜	3⅛	3⅞	3¼	5	Pittsburgh Oil & Gas	80	3¼	3¼	3¼	3¼	0
10	7½	8	6¾	10	Salt Creek Cons	225	6½	6½	†6¾	6¾	0
27	8	26½	17	10	Tidal Osage	325	19	20½	19	20	+3
45	40	43	41	N.P.	Waverly Oil Wks. "A"	.....	.....	.....	.....	.....	.....

*New high †New low

PITTSBURGH CURB MARKET

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended May 6 Sales	First	High	Low	Last	Ch'ge
3⅜	2½	3½	2¾	$ 5	Colombia Synd	.....	.....	.....	.....	.....	.....
.20	.06	.18	.18	5	Duquesne Oil	.....	.....	.....	.....	.....	.....
22	22	.....	.....	10	Forest Oil	.....	.....	.....	.....	.....	.....
91½	85	94	88	25	Gulf Oil Corp	.....	.....	.....	.....	.....	.....
79	79	97	93	100	Houston Gulf Gas pfd	.....	.....	.....	.....	.....	.....
12	7½	10¾	7¾	N.P.	Leonard Oil & Dev	.....	.....	.....	.....	.....	.....
1⅝	1⅝	.....	.....	N.P.	Mountain & Gulf	.....	.....	.....	.....	.....	.....
30¼	29	32	31¼	$ 25	Oklahoma Gas	.....	.....	.....	.....	.....	.....
.....	.....	1.20	1.00	....	Oklahoma Eastern	.....	.....	.....	.....	.....	.....
2	.15	2.70	1.10	10	Omar Oil & Gas	1,000	1.20	1.20	†1.10	1.10	— .10
.....	.....	2½	2	....	Pittsburgh Oil Dev	1,000	2	2	†2	2	0
2	1¾	2¼	2¼	5	Do Pfd	.....	.....	.....	.....	.....	.....
33½	20	31	24	10	Plymouth Oil	.....	.....	.....	.....	.....	.....
7	3	6	5½	5	States Oil	.....	.....	.....	.....	.....	.....
3½	2	3⅞	2⅛	1	Texon Oil & Land	900	2½	2½	†2⅛	2¼	0
25¾	8	23¾	18	10	TidalOsage(non-vtg)	400	18½	18½	†18	‡18	—1½

†New High Record xEx-Dividend ‡Ex-Rights

Standard Oil Stock Traded in New York

1926 High	1926 Low	1927 High	1927 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 6 Sales	First	High	Low	Last	Ch'ge
21	16¾	21⅝	18½	£ 4,000,000	£ 1	Anglo-American Oil	60¾cS.A.	May 27, 26	200	.....	18¾	18⅝	18¾	0
20¼	16½	20½	17⅞	.....	£ 1	do ctfs. non-voting	.....	.....	200	.....	18¾	18⅝	18⅝	+ ⅛
19	16	20½	18⅜	.....	£ 1	do voting ctfs	.....	.....	100	19	19	19	19	0
2¾	.75	1¼	1	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	700	1	1	1	1	— 6
5	2⅜	4¼	2¾	$ 10,000,000	$ 10	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
75	65	69	50	1,000,000	25	Borne Scrymser	$1S.A.	Apr. 15, 27	150	50¾	57	50¼	57	+ 7
59½	42	53¼	45	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 27	1,200	50	* 53¼	49½	53¼	+ 3¾
82½	65	95	76½	3,000,000	25	Chesebrough Mfg	$1Q	Mar. 31, 27	.....	.....	.....	.....	.....	.....
25⅞	17½	22⅝	17½	35,051,920	10	Continental Oil	30cQ	Mar. 15, 27	11,200	17⅝	18⅝	†17½	18½	+ ¾
17	13½	.....	.....	1,500,000	25	Crescent Pipe Line	.....	Sept. 15, 23	.....	.....	.....	.....	.....	.....
137	102	137	89	3,000,000	100	Cumberland Pipe Line	$2Q	Mar. 15, 27	80	91	91	90	91	— ½
63¾	43	55	47	5,000,000	100	Eureka Pipe Line	$1Q	May 2, 27	.....	.....	.....	.....	.....	.....
32½	9⅛	13½	9¾	2,000,000	100	Galena Signal Oil	.....	June 30, 25	2,000	10	10	† 9¾	9¾	— 1¼
94½	35	59¾	38	4,000,000	100	do new pfd	.....	June 30, 26	100	40	40	40	40	+ 2
97½	40	60⅛	48¾	2,000,000	100	do old pfd	.....	June 30, 26	20	48½	48½	48½	48½	0
995⅛	52	62¾	54	72,916,666	25	Humble Oil & Refining	30cQ	Apr. 1, 27	6,200	57½	57½	55½	57¾	0
144½	125¼	150	123¾	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 15, 26	3,400	140¼	*150	140¼	148	+ 9
59¾	32½	47	37¾	(sh) 6,491,952	N.P.	Imperial of Canada	25cQ	Mar. 1, 27	8,600	43	44¾	43	44½	+ 1⅛
70	54¼	69½	61	$ 5,000,000	$ 50	Indiana Pipe Line	$1Q	Feb. 15, 27	50	66	66	66	66	0
35¼	28¾	34⅞	30	(sh) 7,118,138	N.P.	International Petroleum	25c	Nov. 15, 26	15,200	30	30⅝	30	30	0
20¾	12½	15½	13½	$ 6,362,500	$12½	National Transit Co	25cQ	Mar. 15, 27	1,800	15⅛	15½	15⅛	15½	+ ½
51½	27⅜	36	31¼	5,000,000	100	New York Transit	.....	July 15, 26	150	32½	32¾	32½	32½	+ ½
80½	64	80	70	4,000,000	100	Northern Pipe Line	$3S.A.	Jan. 1, 27	300	76	79	76	79	+ 3½
67⅜	55¾	64¼	52	60,000,000	25	Ohio Oil Co	50cQ	Mar. 15, 27	6,500	53¼	56⅜	53¼	56⅜	+ 3
24¾	15	19	12	10,000,000	25	Penn Mex Fuel	.....	May 21, 25	300	.....	16	15¼	15¼	— ¾
60¼	48	55½	45⅝	60,000,000	25	Prairie Oil & Gas	50cQ	Nov. 30, 26	16,600	45⅞	48⅝	45⅞	47⅜	+ 1½
137½	122¼	165¾	132	81,000,000	100	Prairie Pipe Line	$2.50Q	Apr. 30, 27	2,450	164¾	165	162	164½	+ ½
220	184½	201½	180	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 26	30	183	183	183	183	— 2
27	21	27¼	15½	5,000,000	50	Southern Pipe Line	.....	Mar. 1, 26	100	17	17	17	17	0
50	34½	41½	34½	20,000,000	25	South Penn Oil	50cQ	Mar. 31, 27	900	34½	35¼	34½	35	+ ½
57	49	69	55½	3,500,000	100	South West Pa. Pipe Lines	$1Q	Apr. 1, 27	50	69	* 69	69	69	+ 1
70½	60½	74¼	64¾	226,322,708	25	S. O. Indiana	62½cQ	Mar. 15, 27	48,800	65⅛	67½	†64¾	67⅜	+ 2¼
36½	16½	20⅞	15⅝	8,000,000	25	S. O. Kansas	.....	June 16, 24	500	16⅜	16¾	16⅜	16¾	+ ⅛
134¾	108	122¼	112	16,929,809	25	S. O. Kentucky	$1Q	Mar. 31, 27	1,000	113	113¾	112⅞	113¼	+ ¾
51⅜	42	49½	45½	4,518,600	25	S. O. Nebraska	63cQ	Mar. 21, 27	100	46½	46½	46½	46½	— 1
672	288	86	73	14,000,000	25	S. O. Ohio	$2½Q	Apr. 1, 27	600	78½	$1	78½	80	+ 1½
120½	116½	122	117¼	7,000,000	100	do pfd	$1¾Q	Mar. 1, 27	10	117¾	117¾	117¾	117¾	— ½
23	15½	17⅝	14½	861,466	25	Swan Finch Co	.....	Nov. 1, 19	100	15½	15½	15½	15½	— ½
109¾	90¼	116½	95⅛	62,199,950	25	Vacuum Oil	50cQ	Mar. 19, 27	6,300	112¼	112½	110½	112	0

Atlantic Refining Co.—J. W. Van Dyke elected chairman of the board and W. M. Irish was elected president. Mr. Irish had been senior vice-president. Albert Hill and Edwin R. Cox were elected vice-presidents. Other officers were re-elected.

STANDARD
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ISSUES

New
Statistical Circular

PIPE LINE
COMPANIES

Copy upon request

CARL H. PFORZHEIMER & CO.
Specialists in Standard Oil and
Miscellaneous Oil Securities
25 Broad Street New York

New York Curb Market

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended May 6 Sales	First	High	Low	Last	Ch'ge
6¾	.45	2⅞	.76	$5	Amer. Con. Oilfields	13,200	90	91	83	88	— 7
14½	4	7½	4	N.P.	Amer. Maracaibo	7,300	4¾	4¾	4⅝	4⅝	— ⅛
8¾	5¼	8⅝	6¾	$10	Arkansas Nat. Gas..	500	7	7¼	7	7¼	0
20¾	14⅜	20½	15½	N.P.	Beacon Oil	300	17	17⅜	16½	17⅜	+ ⅝
85¼	60	27	20½	N.P.	British American	.....	.....	.....	.....	.....	.....
28¾	9¼	28¼	15½	25c	Carib Syndicate	3,500	15¾	17½	15¾	16⅝	+ ⅝
.....	.....	26	16½	....	do ctfs. of deposit.	.....	.....	.....	.....	.....	.....
51	37½	58¾	40¼	$20	Cities Service	45,600	44⅜	48⅞	44⅜	48⅜	+ 4⅛
92½	82¾	92¼	87	100	do pfd	6,000	89¼	91⅝	89¼	91	+ 1¾
8¾	7¼	8½	7¾	10	do pref. B	200	8¼	8¼	8⅛	8¼	+ ⅛
25¼	19	29¼	25½	10	do bankers' shares	.....	.....	.....	.....	.....	.....
3½	1⅜	3⅞	1¾	$1	Colombia Syndicate	1,900	2	2⅛	1½	2⅛	+ ⅛
10⅜	8⅜	9½	8¾	10	Consolidated Royal.	100	8⅞	8⅞	8⅞	8⅞	+ ⅛
16	10	14⅜	10½	N.P.	Creole Syndicate	16,500	11¼	11⅞	†10½	11¾	+ ⅛
7¾	1⅜	3	1¼	N.P.	Crown Central	200	.....	1½	1⅜	1½	+ ⅛
8½	½	1²	4¾	....	Darby Petroleum	700	10½	10½	9	9	— ¾
.....	.....	11½	8	....	do trust ctfs	100	9	9	9	9	— ¾
4	1¾	2½	1¾	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
19	13	16¾	10	N.P.	do pfd	100	11⅜	11⅜	11⅜	11⅜	— 2⅝
7½	2½	3¾	1⅜	N.P.	Gibson Oil	9,000	1¾	1¾	1⅜	1¾	+ ⅛
2	.68	1¾	40	N.P.	Gilliland ctfs	800	.....	56	55	55	—11
98	82	96½	86¼	$25	Gulf Oil Corp	3,100	87¼	89½	†86¼	88¾	+ ¼
3¾	1	2¼	1¼	N.P.	Kirby Petroleum	300	.....	1¾	1½	1½	0
12¼	5¼	10⅜	7	N.P.	Leonard Oil & Dev..	3,300	7¼	7⅜	† 7	7⅛	+ ⅛
27	20	27½	22	N.P.	Lion Oil & Refg	1,100	22½	24¾	22½	24¾	+ 1⅞
46	31	46½	37	$25	Lone Star Gas	400	42½	44½	42½	44½	+ 2¼
2¾	2	2¾	1¾	1	Magdalena Synd	4,700	1⅞	1⅞	1½	1⅝	— ⅛
5½	1⅞	3	1½	10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
1¾	1¼	1½	1¼	1	Mountain & Gulf	.....	.....	.....	.....	.....	.....
26	23	26⅞	22¾	10	Mountain Producers	6,500	23	24¼	23	24¼	+ 1⅛
6¾	5	5⅞	4⅞	5	New Bradford	400	5	5¼	5	5¼	+ ⅛
11¾	2	6¾	4	10	New England Fuel	.....	.....	.....	.....	.....	.....
17	9⅛	13¾	9¼	1	New Mex. & Ariz	1,400	9⅝	10	9½	9¾	+ ⅛
17	8	11	9	25	New York Oil	400	.....	10⅝	10⅛	10⅜	+ ⅛
12⅛	8¾	12⅝	11⅛	N.P.	North Cent. Texas	.....	.....	.....	.....	.....	.....
44¾	33	.....	.....	$25	Ohio Fuel Corp	.....	.....	.....	.....	.....	.....
33	28½	22½	21¾	....	Okla. Nat. Gas ctfs	100	22½	22½	22½	22½	0
10⅛	5⅞	9⅜	5½	N.P.	Pandem	14,600	6¾	7⅜	6⅛	6¾	0
12¾	11¾	12⅝	10⅜	N.P.	Pantapec Oil	2,200	10⅞	11⅜	†10⅜	10¾	0
2¾	.20	.87	.26	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
22¾	12	13½	9⅜	$10	Pennok Oil	800	9⅝	9⅝	† 9⅜	9½	— ⅛
38	14⅜	24¾	17	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
30¾	12	15⅜	5⅝	N.P.	Reiter-Foster	2,400	6	6½	6	6⅛	— ⅛
27½	22	27½	15	$25	Richfield Oil	7,500	18¼	22⅛	18¼	21½	+ 3½
7½	4½	7	4½	N.P.	Ryan Consolidated	100	4½	4½	† 4½	4½	— ⅛
10	7½	8	6	$10	Salt Creek Cons	1,000	6¼	6⅜	† 6	6⅛	— ⅛
36	26⅞	32	27¼	10	Salt Creek Prod	3,000	27½	28¼	27½	28¼	+ ¾
4¾	1⅜	7	3	5	Savoy Oil	300	.....	4½	4¼	4¼	+ ⅛
27	7⅜	26¼	17	10	Tidal Osage	1,500	19	21	18¾	21	+ 3⅛
25¾	7⅜	23¾	15	10	do non-voting	10,900	15½	19⅜	15½	18⅜	+ 2⅞
27	20⅞	23½	15¼	N.P.	Tide Water Assoc	23,300	15⅝	17½	15⅝	17½	+ 1½
99½	93¾	95¾	89	100	do pfd	2,100	90⅜	90½	90	90⅜	0
.....	.....	80	68½	100	Transcont. pfd	.....	.....	.....	.....	.....	.....
8	4⅛	7⅜	4¾	5	Venezuelan Petro	3,100	5	5	4¾	4¾	— ⅛
30⅛	23⅞	27⅞	23½	N.P.	Warner-Quinlan	220	25¾	25¾	†23½	25¾	+ ⅛
36⅜	22	32⅝	20¾	N.P.	Wilcox Oil & Gas	1,100	22¼	24¾	22	24¾	+ 3¾
9½	4⅜	8	5¼	$1	Woodley Petroleum	1,400	6	6	5½	5½	— ⅛

*New High †New Low xEx-Dividend

Gasoline Sales Increase in Pennsylvania

CLEVELAND, May 9.—Increased demand for gasoline was reported by western Pennsylvania refiners today. The price of 58-60 U. S. Motor ranged 8.75 to 9 cents with more sales at the latter figure than late last week when the range was the same. One quotation but no sale of 58-60 Motor at 9.25 cents was reported.

Kerosene was rather quiet and several refiners were quoting 0.125 cent lower than a week ago. Fuel oil also was off with prices of the various grades ranging 5 to 5.25 cents.

Viscous neutrals continued strong. There was a rumor of one sale of 200 viscosity No. 3 color neutral at 35 cents but this rumored sale could not be located. Sales at 34 cents were reported.

Demand for unfiltered steam refined stocks continued light. Quotations continue to vary widely. Sales have been reported at the top of the quoted range and brokers report being able to buy under the quoted range when they have an order in hand. Two refiners reported sales of 600 flash test stocks at 18 cents and another said an offering of this grade at 15 cents found no taker.

Demand for filtered cylinder stocks continues good. One refiner reported being behind on shipments. Bright stocks are holding up fairly well and one large maker reported he was sold up. Demand for long residuum stocks was described as good but less active than a few weeks ago.

Demand for petrolatums was good at steady prices. Paraffin wax was easy, export sales being generally at 2.75 cents, New York, for 122-124 A.m.p. and 124-126 A.m.p. and up to 3 cents, New York, for domestic business. New York brokers were offering 2.50 cents but refiners said they were turning down such offers.

Eastern Kentucky Market

CLEVELAND, May 9.—Gasoline is active in the eastern Kentucky market and prices are held back only by Mid-Continent markets, one refiner said today. Today's quotations are:

60-62 437 e.p. gasoline	9-9.25
60-62 400-425 e.p. gasoline	9.50
64-66 437 e.p. gasoline	9.25-9.50
64-66 365-375 e.p. gasoline	10
68-70 400-410 gasoline	9.75
68-70 325-350 gasoline	10.50
41-43 w.w. kerosene	9.75
34-36 gas oil	5.25
32-36 gas oil	5.25
30-32 fuel oil	5
28-30 fuel oil	4.75
26-28 fuel oil	4.50
24-26 fuel oil	4.25
14-16 fuel oil	4.25

SPRINGFIELD, TENN.—Draughon Bros., oil jobber here, has installed 35,000 gallon storage here. The brothers are Jack M. and Louis R. Draughon.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

REFINERY ACCOUNTANT, 30, twelve years experience in refinery. Formerly superintendent skimming plant. For past five years in direct charge oil refinery accounting for large corporation. Box 851.

TRAFFIC MANAGER—8 years refinery sales and traffic experience, Mid-Continent field. Open for position May 15th. A-1 reference. Box 856.

DESIGNING DRAFTSMAN with nine years' experience oil refinery drafting and estimating, desires permanent location. Now employed. Box 862.

MARRIED MAN—Capable, competent and energetic, marketing petroleum products. Has successfully represented well known companies as salesman and manager. Will go anywhere a permanent and legitimate selling opportunity is offered. Box 861.

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Situations Open

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